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Construction Completion Report Mountain Lake Presidio of San Francisco California

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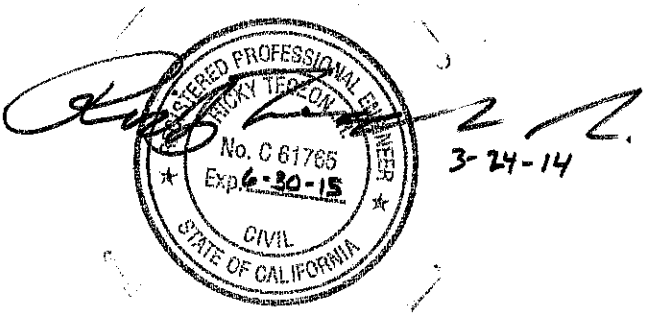

Prepared for

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K/J Project No. 1165014*00

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List of Acronyms and Abbreviations

ARAR	Applicable or Relevant and Appropriate Requirement
bgs	Below Ground Surface
BMP	Best Management Practices
BTEX	Benzene, Toluene, Ethylbenzene, and Total Xylenes
bts	Below Top of Sediment
CCR	California Code of Regulations
CFR	Code of Federal Regulations
COC	Chemicals of Concern
CQA	Construction Quality Assurance
DMU	Dredge Management Unit
DTSC	Department of Toxic Substances Control
FS/RAP	Feasibility Study/Remedial Action Plan
gpm	Gallons per Minute
HASP	Health and Safety Plan
HDPE	High Density Polyethylene
LUFT	Leaking Underground Fuel Tank
mg/kg	Milligrams per Kilogram
µg/l	Micrograms per Liter
mg/l	Milligrams per Liter
MHA	Material Handling Area
NHLD	National Historic Landmark District
NPS	National Park Service
NTU	Nephelometric Turbidity Units
PAH	Polyaromatic Hydrocarbons
PAMP	Perimeter Air Monitoring Plan
PIC	Public Information Coordinator
PTC	Professional Tree Care Service
PTMP	Presidio Trust Management Plan
QA/QC	Quality Assurance/Quality Control
QSD	Qualified Stormwater Pollution Prevention Plan Developer
QSP	Qualified Stormwater Pollution Prevention Plan Practitioner
RAB	Restoration Advisory Board
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RDIP	Remedial Design Implementation Plan
RI	Remedial Investigation
SAV	Submerged Aquatic Vegetation
STLC	Soluble Threshold Limit Concentration
SWPPP	Storm Water Pollution Prevention Plan
TCLP	Threshold Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
TPHd	Total Petroleum Hydrocarbons as Diesel
TPHg	Total Petroleum Hydrocarbons as Gasoline
TPHmo	Total Petroleum Hydrocarbons as Motor Oil

Trust	Presidio Trust
TSS	Total Suspended Solids
UCL	Upper Confidence Limit
USEPA	United States Environmental Protection Agency
VMP	Vegetation Management Plan
Water Board	San Francisco Bay Regional Water Quality Control Board
WET	Waste Extraction Test

Executive Summary

This Construction Completion Report (Report) describes the implementation of the remedial actions approved by the Department of Toxic Substances Control (DTSC) for the remediation of Mountain Lake at the Presidio of San Francisco, California (Site). The remedial actions at the Site are described in the Remedial Design Implementation Plan (RDIP). The remedial actions were implemented by the Presidio Trust (Trust) in accordance with the Feasibility Study/Remedial Action Plan (FS/RAP).

This Report provides background information, a description of the approved remedial action plan, and a description of remedial activities at the Site. Due to the quantities of materials to be removed from the Site, access and weather constraints, and limited availability of staging and storage areas, the remedial action was implemented in phases: Site Preparation, Waste Removal, and Restoration.

The remedial action for the Site entailed dredging and offsite disposal of sediment containing concentrations of chemicals of concern (COCs) above applicable cleanup levels. The dredging operation was based on the sediment removal limits proposed in the FS/RAP, following site characterization activities and subsequent data and risk evaluation. The dredging activities were sequenced to maximize efficiency and logistics of onsite dredge material management and truck traffic through the area.

The Contractor collected sediment samples from the lake bed prior to dredging in cooperation with the landfills, to obtain profiles of the material in advance and enable direct-loading of dewatered sediment. Verification sampling and analysis was conducted at the completion of sediment removal activities. Based on the analytical results and consultation with DTSC, no additional remedial measures were required to address sediments remaining in the lake.

Upon completion of the dredging operations, the Contractor restored the pre-construction grades in the upland support areas of the Site. The Contractor also amended soils with horticultural materials in preparation for revegetation during site restoration. Disturbed areas were graded to provide proper drainage and protected with erosion control measures.

The project required the protection of cultural and natural resources. There were multiple historic foundations protected within the construction area. There were also natural resources that were monitored during site construction activities, including native plant habitat, wetlands, and migratory birds and nesting habitat.

Remedial construction work at the Site was conducted in general accordance with project documents, with the exception of design modifications in response to additional sediment removal in the North Arm of the lake and near the eastern shore of the lake. The remedial actions were effective in removing contaminated material from the Site and restoring ecological risk to acceptable levels. As part of the site restoration activities following the remedial action, areas of the site were restored as native planting and historic forest habitat, consistent with future planned land uses.

Section 1: Introduction

This Construction Completion Report (Report) describes the implementation of the remedial actions approved by the Department of Toxic Substances Control (DTSC) for the remediation of Mountain Lake in the Presidio of San Francisco, California (Site, Figure 1). The remedial actions for the Site are described in the Remedial Design Implementation Plan (RDIP; Kennedy/Jenks 2013). The remedial actions were implemented by the Presidio Trust (Trust) in accordance with the Feasibility Study/Remedial Action Plan (FS/RAP; Kennedy/Jenks 2012).

This Report has been prepared by Kennedy/Jenks Consultants (Kennedy/Jenks) on behalf of the Trust. It provides background information, a description of the approved remedial action plan, and a description of closure activities at the Site. The limits of remediation work are shown on Figure 2.

1.1 Project Overview

Sediment in the lake was known to be contaminated with the following chemicals of concern (COCs): lead and total petroleum hydrocarbons as motor oil (TPHmo). The COCs were present in lake sediment at levels that posed a potential risk to ecological receptors. The remedial action included dredging and offsite disposal of contaminated sediments.

A chronology of the project's progress is summarized in Table 1. A photographic log of the construction progression from pre-construction activities to the present is included as Appendix A. Communications with regulatory agencies are summarized in Table 2.

1.2 Site Description and History

Mountain Lake is an approximately 4-acre, groundwater-fed lake located at the southern edge of the Presidio. The lake receives runoff from Highway 1 (Park Presidio Boulevard) and the Presidio golf course. Leaded fuels associated with highway use and pesticides from the golf course have historically contributed contaminants to the lake. The golf course is not a significant continuing source of contaminants to the lake.

The lake is the main feature of Mountain Lake Park, a recreational area. Picnicking, dog-walking, and hiking are popular activities. The area to the south of the lake contains a playground, tennis courts, picnic areas, and a small beach. Fishing, swimming and recreational boating are not permitted in or on Mountain Lake. The lake area includes open water, wetlands, and riparian woods and vegetation, and supports a variety of exotic and native plant and animal species.

Over 185 samples of sediment have been collected from the lake during remedial investigations conducted between 1990 and 2011. Four samples have also been collected from sediment in Park Presidio Boulevard storm drains that feed into the lake. Twelve surface water and seven sediment elutriate (liquid expressed during dewatering) samples have also been collected and analyzed. The analytical results were presented and summarized in the *Remedial Investigation Summary and Risk Evaluation, Mountain Lake, Presidio of San Francisco* (RI Summary; URS 2011) and *Letter Report – Sediment Sampling at Mountain Lake, The Presidio Trust, San*

Francisco, California (Kennedy/Jenks 2012b). COCs were detected in sediment above site cleanup levels. COCs are not present above water quality criteria or drinking water levels in surface water.

1.3 Sediment Removal, Disposal, and Restoration Plan

1.3.1 Remedial Action Plan

In May 2012, DTSC approved the FS/RAP (Kennedy/Jenks 2012a), which presented the remedial action objectives (RAOs), discussed the site background including remedial investigations, summarized the risk at the Site, and identified and evaluated remedial alternatives.

The RAOs for the Site state the ultimate goals for the remedial action and provide a basis for assessing the effectiveness of remedial action implementation. The RAOs identified in the FS/RAP include the following:

- Protection of human health and the environment.
- Protection of water quality and ecological resources.
- Remediation of contaminant mass (primarily lead) in the lake sediment, and elimination or reduction in further accumulation of contaminant mass.
- Preference for permanent remedies, whenever practicable, cost-effective, and consistent with planned use of the lake.
- Remediation of sediment in a manner that would not further impair lake health or habitat quality.
- Planning, design, and performance of the sediment remediation activities in a manner that maintains structural stability of the western shore and adjoining Highway 1. Undermining or destabilization of Highway 1 is an unacceptable consequence of the sediment remediation activities.
- Control of future chemical release to the lake associated with stormwater discharges from Highway 1.

RAOs for protection of human health, the environment, and water quality are generally quantitative or semi-quantitative and are judged by comparison to applicable cleanup levels and assessment of potential risks. Other RAOs are qualitative and were evaluated during the analysis of remedial alternatives. Appropriate cleanup levels for a specific location within the Presidio are based upon site-specific lithology, future human and ecological land use, and anticipated water resource use. Future land uses for the Site are intended to be consistent with plans described in the following documents:

- Renewing Mountain Lake. A Summary of the Mountain Lake Enhancement Plan (Trust 2000).

- Vegetation Management Plan and Environmental Assessment for the Presidio of San Francisco (VMP; Trust and National Park Service [NPS] 2001).

- Presidio Trust Management Plan (PTMP; Trust 2002).

A more detailed analysis of the applicable or relevant and appropriate requirements (ARARs) is provided in the FS/RAP (Kennedy/Jenks 2012a).

Three alternatives were developed in the FS/RAP for remediating contaminated sediments in Mountain Lake, including the following:

- Alternative 1 – No action.

- Alternative 2 – Construct a physical cap over contaminated sediments and monitor sediments and surface water.

- Alternative 3 – Dredge and dispose of contaminated sediment, with contingency measures to physically cap areas where dredging may be infeasible.

The FS/RAP identified Alternative 3, dredging and offsite disposal of contaminated sediment with contingent capping, as the preferred remedy to obtain clean closure for the lake (Kennedy/Jenks 2012a). Clean closure was proposed as the preferred remedy because it allows future lake restoration as described in the PTMP, VMP, and planning documents for Mountain Lake.

1.3.2 Remedial Design Implementation Plan

The Trust conducted a number of design studies to evaluate key design criteria for implementation of the remedial action, including the following:

- Survey of biotic habitats in and around the lake area. The updated mapping of these natural resources was used in the layout of available access and staging areas for the Contractor's operations.

- Assessment of local hydrologic conditions. Design storm peak runoff values were used in the preparation of Site run on and runoff controls during construction.

- Slope stability analysis to determine dredging restrictions and backfill requirements along the western shore of the lake at the submerged toe of the Highway 1 roadway embankment.

- Treatability testing to determine sediment in situ properties for off haul planning, odor mitigation, polymer selection for sediment conditioning to facilitate dewatering, geotextile tube selection, and dewatered cake and filtrate chemical and physical properties for disposal and discharge.

This information was presented in the RDIP and provided the technical basis for design of the dredging operation, construction monitoring and mitigation measures, and site restoration.

The RDIP describes the approach to implement the actions approved by DTSC for the remediation of the Site. The RDIP identifies the processes and procedures to be implemented by the Trust and DTSC to facilitate remediation of contaminated sediments in the lake. The RDIP provides background information, a description of the approved remedial action plan, and a description of remediation activities at the Site. The remedial action for the Site entailed dredging and offsite disposal of sediment containing concentrations of COCs above applicable cleanup levels. Remedial construction, administrative, operation, and maintenance activities associated with the preferred remedial action consisted of the following:

- Protection of adjacent cultural and natural resources, including historic foundations and native plant habitat.
- Removal of surface vegetation, clearing, and grubbing in preparation for dredge material management in upland areas.
- Removal of sediment containing concentrations of COCs exceeding applicable cleanup levels.
- Dredge material management, including containment, conditioning, dewatering, and filtrate water treatment.
- Water quality monitoring during dredging and treated filtrate discharge.
- Confirmation and verification sampling and analysis of sediments to remain following the dredging operation to document that RAOs were achieved.
- Waste disposal profiling, loading, transport, and disposal of dredged material to permitted offsite disposal facilities.
- Bathymetric re-contouring to facilitate future lake restoration.
- Offsite disposal of imported materials and grading to restore areas disturbed during site preparation activities to support the dredge material management operations.
- Installation of stormwater management and erosion control features, including surface drainage structures.
- Site stabilization by planting in accordance with applicable Trust planning documents.

After commencing with the sediment removal activities in the lake, site characterization activities within the North Arm area of the lake, which is comprised primarily of wetland and riparian woodland habitat, were completed. Additional contaminated sediments were identified in the North Arm and the RDIP was amended to include removal of sediment via excavation in the North Arm (see Appendix B).

1.3.3 Remedial Design Documents

Detailed construction plans and specifications (the Remedial Design Documents) were prepared by Kennedy/Jenks in three principal phases:

- **Phase 1 (Site Preparation):** This phase of the Remedial Design Documents was issued by the Trust in December 2012 and identified site preparation details in upland areas to support the dredge material management operations.

- **Phase 2 (Dredging and Off haul):** This phase of the Remedial Design Documents was issued by the Trust in March 2013 and identified dredging areas, depths, and final re-contouring bathymetry.

- **Phase 3 (Restoration):** This phase of the Remedial Design Documents was issued by the Trust in December 2013 and identified site restoration requirements for the disturbed upland areas used to support the dredge material management operations, including final grading, erosion controls, and planting.

The specifications included with each phase of design detailed the requirements for the Contractor's submittals, materials, and execution for the various project elements.

Copies of the Remedial Design Documents, including design clarifications are included in Appendix B.

1.4 Implementation Approach

Due to the sensitivity of impacted and existing resources, access constraints, and limited availability of staging and storage areas, the remedial action was implemented in a phased approach:

- **Pre-Construction Testing and Site Preparation Phase:** This phase involved the design studies conducted prior to construction and the site preparation activities performed in advance of the dredging and dewatering operations to prepare the access and staging areas.

- **Waste Removal Phase:** This phase involved the dredging, pipeline transport, and conditioning of contaminated sediments from the lake; dewatering and water treatment; stockpiling and waste management; confirmation, verification, and profile sampling and analysis; and offsite disposal.

- **Site Stabilization and Restoration Phase:** This phase involved final bathymetric contouring of the lake; restoration grading and soil conditioning of disturbed upland soil areas; installation of final surface drainage features; installation of final post-construction erosion control measures; and planting in accordance with Trust planning documents.

1.5 Project Organization

The project organization chart (Figure 3) identifies the primary agencies and contractors involved in this remedial construction project including the Trust Remediation Department (owner) and the Trust Resource Departments, Kennedy/Jenks (Design Engineer and Construction Quality Assurance [CQA] Monitor), CH2M HILL (Construction Manager), Dixon Marine Services (Contractor), DTSC (lead oversight regulator), San Francisco Bay Regional Water Quality Control Board ([Water Board] supporting oversight regulator), and other subconsultants/subcontractors that participated in the remedial action.

Section 2: Pre-Construction Activities

Pre-construction activities include the tasks completed prior to the start of sediment removal operations. These activities include design studies, Highway 1 roadway stabilization, protection of natural and cultural resources, obtaining approvals and permits for performing the work, providing public outreach prior to the start of construction, and taking measures to reroute traffic (vehicular and pedestrian) during construction.

2.1 Public Outreach

The Trust held several meetings, presentations, and site walks with the public and Restoration Advisory Board (RAB) during the design phase. The Trust notified the Lake Street neighbors of the tree removals and installed temporary signs notifying the public of upcoming remedial construction activities. In addition, the Trust positioned Public Information Coordinators (PICs) around the construction area prior to and during construction. The Trust Public Relations Department continually emailed public notifications and regular updates to nearby residents and interested parties before and during construction. The DTSC and NPS were notified of the construction start date prior to construction. Information about the project, schedule, and a copy of the FS/RAP were made available on the Trust and DTSC websites.

2.2 Protection of Existing Resources

The following measures were taken prior to commencing with sediment removal activities to protect cultural and natural resources at the Site. In general, the Project Manager, the CQA Engineer, and the Contractor monitored implementation of the remedial measures and identified cultural and natural resources to be protected following established Trust protocols and procedures. These protocols and procedures were discussed at the pre-construction kickoff meeting held on 8 January 2013 and periodically during progress construction meetings. The Project Manager notified appropriate Trust personnel as unanticipated cultural and natural resources were discovered to facilitate site visits, determine the nature of the resources, and decide whether or not they required protection.

2.2.1 Cultural Resources

There are a number of potential and actual cultural resources present at the Site, as identified in the Archaeological Management Assessment (Appendix B of the RDIP). To protect these resources a Trust archaeological monitor was available, as needed, during Site construction activities. The archaeological monitor inspected delineation and protection measures for adequate mitigation of remedial implementation-related impacts. The archaeological monitor remained available throughout the duration of remedial implementation activities at the Site.

Following are specific cultural resource issues identified at the Site and mitigation measures followed during implementation of the remedial action.

- **Potential Native American Shoreline Deposits:** Mountain Lake is estimated to be approximately 2,000 years old and is a contributing element of the Presidio National Historic

Landmark District (NHLD). There was the potential for historic Native American deposits on the shores of the lake. Initial in-lake activities involved vegetation removal around the perimeter of the lake in advance of dredging operations. These vegetation removal activities involved some sediment disturbance at the shoreline and the potential to disturbed buried Native America deposits. Following consultation with the Trust archaeological monitor, targeted areas of the eastern shore were identified for close monitoring during construction. The Contractor performed exploratory trenching at a number of locations selected by the archaeological monitor, who inspected the trench spoils for evidence of Native American deposits. No specimens were identified during the exploratory trenching.

- **Historic Foundations:** A number of historic foundations were discovered in the staging area during site preparation activities. These foundations included an historic field stone and mortar foundation wall. Other foundation structures include concrete footings. Following consultation with the Trust archaeological monitor, the staging area design was modified to raise the elevation of the sediment dewatering platform, allowing the historic foundations to be protected in place. Clean import fill was brought onto the staging area and the historic foundations were buried. Trench plates were placed above the historic foundations to provided additional protection near the ground surface of the dewatering platform. During site restoration, the import fill was removed and the site graded to reveal the historic foundations.

2.2.2 Natural Resources

There are a number of natural resources present at the Site, as identified in the Biotic Habitat Report (Appendix A of the RDIP). To protect these resources a biological monitor, HT Harvey, was present, as needed, during site construction activities. The biological monitor inspected delineation and protection measures for adequate mitigation of remedial implementation-related impacts. The biological monitor remained available throughout the duration of remedial implementation activities at the Site.

Following are specific natural resource issues identified at the Site and mitigation measures followed during implementation of the remedial action.

- **Migratory Birds:** Natural resources include migratory birds that were present at the Site. The bird nesting period for the area typically occurs between 1 January and 15 August for raptors and 1 March through 15 August for songbirds. Pre-construction surveys for nesting birds were conducted by the biological monitor prior to commencing with the site preparation and dredging phases of the project. Copies of the bird survey reports are included as Appendix C.

  In September 2012, the Trust removed trees and vegetation from the staging area, pipeline corridor, and east shore access route to facilitate the Contractor's operations. During bird nesting season, the vegetation at the Site was inspected and trimmed as needed to ensure that the vegetation did not grow back to re-establish bird nesting habitat during remediation activities. Native mulch material was placed over the sloped areas of the Site. These measures remained in place until commencement of construction. Additional tree removal required in the North Arm was coordinated with Trust Forestry and Natural Resource staff to avoid potential disruption to nesting or migrating birds.

- **Wildlife Trapping:** Past sampling activities conducted by the Trust have identified various exotic fish, including channel catfish, carp, spotted bass, hitch, and fathead minnows, and other animals such as bullfrogs, swamp crayfish, and turtles. In order to minimize risks to aquatic life in the lake, fish salvage was performed by Stillwater Sciences and turtle trapping was performed by the Trust for relocation of collected animals during the summer of 2012 prior to commencing with dredging operations.

- **Wetlands:** Based on the habitat mapping (Appendix A of the RDIP), remedial action activities at the Site occurred within 20 feet of potential jurisdictional wetlands in the North and East Arms of the lake. Site remediation results in an enlargement of and improvement in the quality of the existing wetlands. Prior to initial clearing and vegetation removal, the Trust salvaged and protected wetland vegetation for reintroduction after dredging activities concluded. The final upland grading plans for the Site avoid altering the hydrology of the area on which the wetlands are dependent. Protective fencing was installed to separate potential wetland areas from the Contractor's operations, with the exception of sediment removal operations within the North Arm. Erosion and sediment mobilization control measures, including installation of silt fences, fiber rolls, hay bales, and erosion control blankets around the wetland boundaries, were implemented during construction to protect and minimize disturbance to the wetland areas.

- **Historic Forest and Native Plant Habitat:** Trees within the historic forest boundary and native species habitat were removed in September 2012 prior to the bird nesting season. Following remedial actions, the historic forest will be restored in accordance with the VMP and under the direction of the Trust Forestry Manager. In native plant habitat areas, native habitat will be restored under the direction of a Trust Natural Resource specialist.

- **Other Vegetative Resources:** Vegetation in work areas was removed in September 2012 prior to bird nesting season. Protected wetland species were salvaged and stored until remediation activities were completed. Additional vegetation removal occurred during clearing and grubbing activities and the removed vegetation was off hauled as green waste or stored for re-use within the Presidio. Removal of vegetation was coordinated with the Trust Forestry and Natural Resource staff to reduce potential disruption to nesting or migrating birds. Remaining vegetation was controlled to keep it 6 inches or less in height throughout the limits of work to avoid creating areas attractive to birds for nesting. Following remedial actions, the historic forest, native plant habitats, and landscaped areas will be restored in accordance with the VMP and under the direction of the Trust Forestry, Natural Resources specialists, and landscape architects, respectively.

2.3 Planning, Submittals, Reviews, and Permits

Following is a summary of the document submission, permitting, and approval activities performed prior to implementing the remedial action.

2.3.1 Planning Documents

Site preparation, dredging, restoration, etc. were conducted in overall accordance with the FS/RAP, RDIP, and the Remedial Design Documents. The documents were written in the context of previous environmental studies that assessed the scope of the impacted areas

(described in Section 1) and the Trust plans regarding ecological planning and restoration. Planning documents include:

- Remedial Investigation Summary and Risk Evaluation, Mountain Lake, Presidio of San Francisco. Prepared by URS Corporation and dated October 2011.
- Feasibility Study/Remedial Action Plan, Mountain Lake, Presidio of San Francisco, California (the FS/RAP). Prepared by Kennedy/Jenks and dated 17 May 2012.
- Remedial Design Implementation Plan Fill, Mountain Lake, Presidio of San Francisco, California (the RDIP). Prepared by Kennedy/Jenks and dated 27 February 2013.
- Presidio Mountain Lake Remediation Project – Existing Biotic Habitats Characterization and Map. Prepared by HT Harvey (Appendix to the RDIP).
- Archeological Management Assessment, Mountain Lake Remediation. Prepared by Presidio Archaeology Lab (Appendix to the RDIP).
- Mountain Lake, Presidio of San Francisco, Hydrology Report. Prepared by Balance Hydrologics, Inc. (Appendix to the RDIP).
- Progress Report No. 1, Geotechnical Consultation, Remediation of Mountain Lake, The Presidio, San Francisco, California. Prepared by Rollo & Ridley. (Appendix to the RDIP).
- Best Management Practices Plan, Mountain Lake, Presidio of San Francisco, California. Prepared by Kennedy/Jenks (Appendix to the RDIP).
- Sediment Sampling and Analysis Plan, Mountain Lake, Presidio of San Francisco, California. Prepared by Kennedy/Jenks (Appendix to the RDIP).
- Perimeter Air Monitoring Plan, Mountain Lake, Presidio of San Francisco, California. Prepared by Kennedy/Jenks (Appendix to the RDIP).
- Phase I Remedial Design Documents. Prepared by Kennedy/Jenks, including design drawings and specifications dated December 2012 and subsequent construction clarifications.
- Phase II Remedial Design Documents. Prepared by Kennedy/Jenks, including design drawings and specifications dated March 2013 and subsequent construction clarifications.
- Phase III Remedial Design Documents. Prepared by Kennedy/Jenks, including design drawings and specifications dated December 2013 and subsequent construction clarifications.

2.3.2 Contractor Submittals

Contractor submittals and review logs are provided in Appendix D. Submittals were reviewed by Kennedy/Jenks for conformance with the Remedial Design Documents, and were amended or revised as necessary to conform.

2.3.3 Reviews, Approvals, and Permits

The following permits and approvals were procured prior to the start of construction activities:

- Obtained approval of the RDIP and Remedial Design Documents by DTSC, the State lead regulatory agency for remedial actions at Mountain Lake.
- Obtained Trust Excavation Clearance No. 6443 dated 4 January 2013.
- Obtained Trust Construction Permit No. 132678-0003 dated 16 January 2013.
- Obtained a USA Dig Permit.
- Reviewed and approved the contractor's submittals, including the Health and Safety Plan, Traffic Control Plan, Clearing and Grubbing Plan, Aquatic Vegetation and Debris Plan, Dust Management Plan, SWPPP and erosion control plan, Dredging Operations Plan, Waste Management Plan, and Decontamination Plan.

Agency reviews and interactions were conducted as summarized in Table 2. Copies of Trust permits are included in Appendix E.

2.4 Temporary Facilities, Protections, and Controls

Prior to the start of construction and in conformance with the Remedial Design Documents, the Contractor provided and maintained the following temporary facilities and controls at the Site:

- Installed perimeter fencing around the project work area per the general alignment shown on Figure 4 and in conformance with the Remedial Design Documents prior to the start of construction. Trust Natural Resources or Forestry staff oversaw the installation of high-visibility fencing adjacent to vegetated areas in the East Shore and North Arm of the lake and in the staging area. Temporary chain link fencing was used to exclude the public from the dredging access corridor along the North Arm adjacent to West Pacific Avenue between the East Shore access ramp and the staging area. Gates were installed to allow temporary closure of West Pacific Avenue during material transport operations.
- Mobilized temporary facilities, including sanitary facilities for workers, and equipment storage units, to the staging area shown on Figure 4. The Contractor installed a project job trailer onsite and provided temporary sanitary facilities for their employees and arranged for sanitary waste to be removed and disposed of at an offsite facility in accordance with applicable laws and regulations. The Contractor installed temporary equipment storage units as shown on Figure 4.
- Established temporary parking, truck, and heavy equipment staging areas at the locations shown on Figure 4.
- Installed pedestrian and vehicle traffic controls and signage along the project haul route, staging area, and access ramp. Installed trail closure signs at trail entrances to the project work area and staging area, as shown on Figure 5.

- Installed stormwater management, erosion control, and sediment tracking control measures for construction, in conformance with the Contractor's Stormwater Pollution Prevention Plan (SWPPP).

- Established survey control points.

Details of these activities and the location of protective fencing, temporary facilities and controls, erosion control measures, etc. were presented on the Remedial Design Documents and described in the specifications.

2.5 Trail Closures, Traffic Management, and Signage

The Contractor followed a Transportation Plan, which was submitted in accordance with the Remedial Design Documents and approved by the Trust.

- Mountain Lake trail was temporarily closed during specific construction activities involving heavy truck traffic, including material delivery and sediment off hauling. Figure 5 presents the trail closure plan implemented during construction and depicts locations of detours and posted closure signs. The Trust prepared informational signs for the project and posted them at appropriate locations along the Contractor-enforced closure route.

- Figure 5 shows the authorized hauling route. Onsite truck traffic was controlled by the Contractor's personnel equipped with radios to coordinate truck ingress and egress. The Contractor provided flaggers to control traffic flow and minimize disruption to traffic during off hauling operations.

The construction equipment and other appurtenances were staged in the area designated and shown on Figure 4.

2.6 Roadway Stabilization

Geotechnical stability of the Highway 1 roadway embankment was a prerequisite to performing the dredging operation. Caltrans conducted geotechnical investigations along Highway 1 in the vicinity of Mountain Lake to collect information necessary for engineering analysis and design of an embankment stabilization remedy. Based on assessment of site conditions, Caltrans installed a network of below-ground stone columns in the shoulder of the roadway to stabilize the embankment for dredging operations in the lake.

Slope stabilization activities to ensure the stability of the Park Presidio roadway embankment were performed by Caltrans in 2012 prior to the sediment removal operation. These activities included significant disturbance to the western shore of the lake to facilitate installation of approximately 400 stone columns. Following installation of the stone columns, Caltrans restored the western shore, including installation of erosion controls and plantings in consultation with the Trust.

Caltrans also provided ongoing stormwater runoff treatment, which included installing inlet filter inserts into highway drainage inlets and regularly scheduled maintenance activities. Caltrans conducted additional water quality and drainage related work in the North Arm, which included

confirming the location of the northern stormwater pipe outfalls, sediment sampling from within the stormwater pipes, and abandoning in-place the deeper of these two stormwater pipes. Caltrans' drainage investigation reports are included as Appendix F.

Section 3: Construction Activities

Following completion of the pre-construction activities, sediment removal and material management activities commenced. The Trust implemented the remedial actions for the Site described in Section 2 in accordance with applicable local, state, and federal regulations, as well as specific regulations and/or operating procedures established for work within the Presidio. The specific remediation activities associated with implementation of the remedial actions are described in this Section.

3.1 Equipment Mobilization

The following equipment was mobilized to the Site:

- Equipment for preparation of the dredging access corridor and staging area, including a D5 dozer, a water truck, an excavator, and a grading machine.
- Equipment for installation of the dredging pipeline, include a telescopic lift, an excavator, and a high density polyethylene (HDPE) fusing machine.
- Equipment for dredging, including an 8-inch Moray hydraulic dredge, a work boat (skiff), a temporary dock, and a fuel barge.
- Equipment for anchor rock placement, including an on-barge excavator and a materials support barge.
- Equipment for hydrographic surveying and confirmation/verification sediment sampling, including a survey vessel equipped with a sweep system and a sediment sampler.
- Equipment for sediment dewatering and water treatment, including piping, tanks, polymer mixing facilities, geotextile dewatering tubes, and a water treatment plant.

The majority of the Contractor's equipment was transported to the staging area via Highway 1, as shown on Figure 5. The Contractor coordinated with Caltrans to have marine equipment (e.g. the dredge, fuel barge, temporary dock, work skiff, and sectional barges) delivered to the Site by truck and launched into the lake by crane from Highway 1, as shown on Figure 5, during the evening with a lane closure. Caltrans and its stabilization contractor provided traffic control for this part of the mobilization.

3.2 Staging and Access Area Preparation

The Trust completed a number of field preparation activities in the access and staging areas in advance of the dredging and dewatering operations, including the following:

- **Tree Removal:** Trees and vegetation were cleared from the east shore lake access route, the pipeline corridor, and staging area footprints in September 2012. Professional Tree Care Service (PTC) cut down and removed approximately 40 trees in the staging area prior to installation of dredge material management facilities. PTC cut down the trees, removed the trunks and limbs, and ground the stumps below existing grades. Approximately 1,500 cubic

yards of mulched tree matter was retained for use during site restoration of the non-planting areas of the Site. Tree removals and vegetation clearing areas are identified on Figure 6.

- **Clearing and Grubbing:** The Contractor cleared the upland access and staging areas by removing the woody debris remaining from the tree removal operation, and the topsoil and other organic material. In accordance with the Contractors Waste Disposal Plan, which was submitted to the Trust for approval, the cleared material was direct loaded onto trucks and transported to Recology Sunset Scavenger in San Francisco, California. Clearing and grubbing areas are identified on Figure 6.

- **Demolition:** At the staging area, the existing non-historic concrete foundations were removed and sent to a concrete recycling facility. The concrete demolition areas are identified on Figure 6.

- **Site Grading:** The staging area was graded to facilitate installation of a dewatering platform that was used in sediment dewatering and off hauling operations. To accommodate the protection in-place of historic foundations discovered during clearing and grubbing, clean import fill material was placed in the staging area to elevate grade above the historic foundations. The staging area was then graded to a slope of approximately 0.5 percent from the northeast to the southwest. The ground surface was graded with no cross slope to allow setup of geotextile dewatering tubes. The grading plan for the staging area is shown on Figure 7.

Following completion of these general preparation activities, the Contractor installed sediment management facilities to support the dredging operation, including shoreline access, dewatering platform, sediment transport pipeline, and a filtrate water treatment system.

3.2.1 Shoreline Access

To allow access to marine vessels and pipeline maintenance, a temporary access road and dock was constructed in the east shore of the lake, as shown on Figure 8. The access road was constructed using the following materials:

- Native soil excavated during the grading activities at the staging area.

- Import gravel, which the Contractor removed prior to shoreline restoration. Gravel was retained by the Contractor and transported to the Contractor's construction yard in Richmond, California, for future reuse.

- Crane mats, which the Contractor salvaged prior to shoreline restoration. Crane mats were cleaned and transported to the Contractor's construction yard in Richmond, California, for future reuse.

This shoreline access area was used to facilitate equipment access to the lake, provide support services such as delivering fuel to the water vessels, and supply materials and equipment as needed.

3.2.2 Dewatering Platform

The Contractor installed a liner over the graded staging area and constructed a contained dewatering platform for the sediment dewatering operation. Geotextile dewatering tubes were placed inside the contained dewatering platform, which facilitated the collection of water released from the sediment dewatering system. The area for the dewatering platform was approximately 240 feet by 160 feet and consisted of the following components:

- The dewatering platform was constructed to drain towards a collection area located at the southwestern portion of the dewatering platform where water released from the dewatering process was pumped to the water treatment units before being returned to the lake.

- A K-rail barrier was installed around the perimeter of the dewatering platform to contain the lateral discharge of water released from the sediment dewatering system.

- A 60-mil HDPE liner was placed within the dewatering platform and draped over the top of the K-rail perimeter barrier. The HDPE liner was secured in place with sand or other ballast. Seams in the HDPE liner were sealed by fusion welding overlapped edges per the manufacturer's recommendations and following industry standards. Rain water collected within the dewatering platform was pumped through the water treatment system along with water released from the sediment dewatering system to prevent accumulation of water within the dewatering platform and mitigate the potential for uncontrolled releases of runoff.

- A 4-inch layer of concrete was placed on top of the liner to form a durable wearing layer for equipment movement and loading operations. A geotextile was placed between the wearing layer and the liner to protect the liner from potential puncturing.

- Strips of 8-ounce non-woven geotextile fabric were placed on top of the wearing layer prior to placing the sediment dewatering system in the dewatering platform to allow water to drain from beneath the dewatering system.

Following completion of the dredging and sediment off hauling operations, the dewatering platform was deconstructed, with the concrete wearing layer and HDPE liner disposed of offsite as construction debris, the K-rail barrier salvaged, and import fill off hauled to an offsite disposal facility. Topographic grades were restored to pre-construction conditions, with some adjustments to accommodate historic foundations. The location of dewatering platform is shown on Figure 9. Schematic cross sections and details of the dewatering platform are shown on Figure 10.

3.2.3 Sediment Transport Pipeline

Sediment slurry was transported from the dredge to the dewatering area via an HDPE dredge pipeline. The 8-inch diameter dredge discharged sediment slurry through approximately 1,600 lineal feet of 8-inch nominal diameter HDPE pipe up to the dewatering platform. A 12-inch nominal diameter HDPE return pipe was installed parallel to the sediment slurry pipeline to allow discharge of treated filtrate back to the lake. The HDPE pipelines were assembled onsite using a heat fusing machine. The HDPE dredge pipeline was supplemented with rubber flex hose connected to the HDPE pipe using bolted flanges, thereby providing greater mobility for the dredge during in-lake movements. The dredge sediment slurry and treated filtrate return

pipelines were situated within the North Arm access corridor along the existing trail, as shown on Figure 11.

Prior to commencing with sediment slurry transport, the Contractor tested the integrity of the dredge pipeline by performing a flow test with native lake water. The flow test involved pumping native lake water through the pipeline to the dewatering platform and then back to the lake. A visual inspection was performed during the flow test to identify pipe leaks, which were immediately repaired prior to initiating the sediment transport.

3.2.4 Water Treatment System

A temporary water treatment system was provided, installed, operated, and maintained by the Contractor's subcontractor, Clear Creek Systems, Inc., in the staging area adjacent to the dewatering platform to treat filtrate released from the sediment dewatering system prior to discharge back to the lake. The system was configured as three parallel treatment trains and was sized to match the anticipated maximum dredge production rate of 1,200 gallons per minute (gpm) with 50 percent redundancy to allow for routine maintenance. The water treatment system was comprised of the following key components:

- Two 21,000-gallon batch tanks with 600 gpm capacity each.
- Four 21,000-gallon settling tanks with 300 gpm capacity each.
- Three skid-mounted modular sand filter units consisting of four sand filter pods per unit.
- Transfer pumps and control panels.
- Three trailer-mounted bag and media filter units consisting of two bag filters, two activated carbon filters, and two organo-clay filters per unit.

Note that the installed filtrate treatment system differed from the system proposed in the RDIP as follows:

- Storage tanks were added between the geotextile dewatering tubes and the sand filters to provide some hydraulic equalization and allowed for settling out of debris and larger sized particles prior to the water treatment system filtering processes.
- Due to space constraints, filtrate treatment system redundancy was reduced by 50 percent. The installed system continued to provide 100 percent treatment capacity during maintenance activities, which was performed in two batches rather than one.

Technical specifications for the water treatment system were included in the Dewatering and Filtration Plan submitted by the Contractor and approved by the Trust. The system layout and a process flow schematic are shown on Figures 11 and 12. Startup and testing of the water treatment system installation was conducted in accordance with the BMP Plan (Appendix E of the RDIP).

3.3 Sediment Removal, Handling, and Disposal

Removal of contaminated sediments from the lake involved hydraulic dredging, sediment conditioning, dewatering, and off hauling. Sediment was conveyed through the HDPE dredge piping system and dewatering was accomplished using geotextile dewatering tubes. The dredged sediment slurry was conditioned with polymers to facilitate coagulation and flocculation of suspended solids prior to filling the geotextile dewatering tubes. Water released from the geotextile dewatering tubes was filtered with sand and polished with organo-clay/activated carbon to further reduce total suspended solids, lead, and petroleum hydrocarbon concentrations that may be present in the filtrate. The entire hydraulic system operated as a closed loop process, with the exception of dewatered sediment, which was transported offsite for disposal.

3.3.1 Aquatic Debris and Vegetation Removal

The Contractor removed aquatic vegetation and submerged debris in advance of dredging and in accordance with requirements in the Remedial Design Documents.

- **Aquatic Vegetation:** Aquatic vegetation removal consisted of designated tules including roots and organic materials. This material was removed to minimize potential impedance of the hydraulic dredge during dredging and facilitate future lake restoration activities. Tule removal beyond the limits of sediment remediation was performed in accordance with Clean Water Act Section 401 Water Quality Certification and Section 404 Nation-Wide Permit.

- **Aquatic Debris:** An initial hydrographic survey identified some large debris that was visible at the sediment surface. Aquatic debris primarily consisted of submerged trees and shrubs including roots, tree branches and stumps, brush, shrubs, reeds, weeds, scrap wood and metal, debris, rocks, pipes, and other objectionable materials that would impede a hydraulic dredge cutterhead.

Prior to beginning the aquatic vegetation and debris removal work, the Contractor submitted a plan for approval by the Trust depicting the proposed limits and phasing of the removals. The aquatic vegetation and debris removal areas are shown on Figure 13.

The removal of the aquatic vegetation and debris from Mountain Lake proceeded as follows:

- An excavator was situated on a movable barge, with an additional support barge equipped with bin-walls staged to contain removed materials.

- Vegetation was removed from the shoreline and debris was removed from the lake bed within the limits of removal using an excavator with an articulated thumb. Submerged tree trunk removal required the use of chain saws to reduce the size of the wooden debris to manageable dimensions.

- Material was placed onto the support barge and work skiffs were used to position the support barge next to the east shore access for off loading using a land based excavator.

- Removed vegetation and debris were allowed to drain prior to being placed into a track dump for transfer to the staging area, where the material was allowed to consolidate prior to

loading into trucks for transport to an offsite disposal facility. Additional information regarding the offsite disposal of aquatic vegetation and debris is presented in Section 4.

The Contractor performed a post-aquatic vegetation and debris removal hydrographic survey prior to commencing with dredging operations (see Appendix G).

3.3.2 Dredging Operation

The key component processes of the dredging operation consisted of dredging, transport to a processing facility for conditioning and dewatering, loading, transport, and disposal. The layout for the dredging operation a process flow schematic are shown on Figures 11 and 14, respectively. The dredging operation was performed in two phases due to limited space for sediment management and to comply with the project schedule constraints. The first phase of dredging proceeded from 14 May to 1 July 2013. The second phase of dredging proceeded from 13 August to 26 September 2013. The principal elements of the dredging operation were as follows:

- **Dredge Cut Layouts:** Before dredging operations in the lake began, the Contractor established four Dredge Management Units (DMU-1 through DMU-4) as shown on Figure 15. A fifth area, DMU-5, was added following pre-confirmation sampling and analysis, which identified a deeper deposit of sediment to be removed. Dredging in DMU-4 was performed last as this area encompassed dredging along the western shore of the lake where stabilization with rip rap would be required. Turbidity curtains were deployed along the southern shore to protect the beach, at the inlet to the overflow pipe to protect downstream water bodies, and at the effluent discharge pipeline outlet.

- **Dredge Vessel:** The Contractor used an 8-inch Moray hydraulic dredge to perform the sediment removal within the lake. This dredge featured a closed loop hydraulically driven underwater pump, power up and down winches with API-rated drums for proper cable storage, a PLC-based operation system, and stern kicker spud for dredge advancement and positioning. The Moray dredge was equipped with an 8-inch suction by 8-inch discharge Metso slurry pump and was cable of dredging a cut width of 18 feet with the ladder extension up to 16 feet below the water surface at an angle of 45 degrees.

  The dredge was equipped with a Krohne flow meter and a Berthold Technology nuclear density gauge. These instruments provided the dredge operator the necessary data to provide a consistent sediment slurry density at a flow rate acceptable to the polymer mixing spool used for sediment conditioning. The data output from these instruments as well as performance data on the dredge were monitored as part of the Contractor's operating procedures.

- **Dredge Positioning:** A water level gauge provided real time information on the rise and fall of the lake stage, which was wirelessly imported into the Dredgepack® positioning software. The dredge operator's positional display showed corrected elevations allowing the dredge operator to dredge to a constant depth without the need to convert measured ladder depth to a real ladder depth as the dredging progresses. Calibration checks were performed as described in the RDIP and Contractor's Operations Plan to ensure the accuracy of the dredge positioning system. Progress and final bathymetric surveying indicated that the

Contractor's dredging operation complied with the depth tolerances required in the Remedial Design Documents.

- **Volume Estimate:** The Contractor dredged approximately 17,400 cubic yards of in situ sediment from the various DMUs. Figure 16 shows the extent of dredging and summarizes the depth of dredging relative to the existing sediment surface. The final dredged bathymetry is shown on Figure 17. Figure 18 shows typical dredge prisms with the over-dredge allowance of six inches identified. Dredging side slopes were limited to a maximum slope of 3 (horizontal) to 1 (vertical) based on the slope stability analysis performed during remedial design.

- **Production Estimate:** The Contractor targeted a dredge production rate of approximately 1,200 gpm at 10 percent solids by volume, which would have removed approximately 36 cubic yards per hour of in situ dredged material. However, challenges related to the organic-rich and iron-rich nature of sediment deposits reduced production as much as 50 percent for limited periods during the dredging operation.

Additional details related to the Contractor's dredging operation are described in the Contractor's Operations Plan submitted to the Trust for approval (see Appendix D for Contractor's submittals). Progress bathymetric surveys are included in Appendix G and daily dredging logs maintained by the Contractor are included in Appendix H.

3.3.3 Sediment Conditioning and Dewatering Operations

A temporary sediment conditioning and dewatering system was provided, installed, operated, and maintained by the Contractor's subcontractor, WaterSolve LLC, in the staging area adjacent to the dewatering platform to dewater the sediment to comply with the landfill's requirements for waste acceptance. The main components of the sediment conditioning and dewatering system were as follows:

- **Sediment Conditioning System:** The sediment conditioning system included equipment to store neat (undiluted) polymer, dilute it, and inject diluted polymer into the geotextile dewatering tube feed line. Both flocculent and coagulant polymers were used, as recommended by the Treatability Report (see Attachment D of the RDIP for the polymer MSDS sheets). The sediment conditioning system consisted of pumps, tanks, and mixing equipment sufficient to mix neat polymer with water to make the polymer solution, a chemical feed system for the polymer additions, piping, valves, supports, controls, and other accessories and appurtenances. Polymer was injected into the pipeline using a mixing spool and polymer injection pump. Water was sourced from the lake for polymer preparation.

- **Geotextile Dewatering Tubes:** The conditioned slurry was directed to the geotextile dewatering tubes located within the dewatering platform. Multiple geotextile dewatering tubes were kept online concurrently, and the system operators managed the geotextile dewatering tubes through various dewatering phases. The geotextile dewatering tube layout is shown on Figure 19. Based on the dredge volumes, space limitations, and vendor input, the Contractor configured the geotextile dewatering tubes in three layers that formed a stable pyramid of tubes. Bottom layers were filled to capacity with conditioned sediment slurry before progressing to the next layer. A manifold was installed that allowed individual

filling of select geotextile dewatering tubes at the discretion of the Contractor to maximize fill heights in the tubes and optimize dewatering time.

Additional details related to the dewatering system, including polymer addition and geotextile dewatering tubes are provided in the BMP Plan (Appendix E of the RDIP) and the Dewatering and Filtration Plan submitted by the Contractor and approved by the Trust. The system layout and a process flow schematic are shown on Figures 11 and 20. Startup and testing of the sediment conditioning and dewatering system installation was conducted in accordance with the BMP Plan (Appendix E of the RDIP).

Following mobilization, system commissioning was performed using lake water prior to commencing with dredging operations in general accordance with the description provided in the RDIP. Minor leakage repairs and electrical adjustments were performed and dredge slurry was introduced to the dewatering and filtrate water treatment system on 14 May 2013. The sediment conditioning and dewatering process generally proceeded as follows:

- The sediment conditioning process began with pumping of the dredged sediment into a pipeline where the polymers (flocculant and coagulant) were injected and mixed with the sediment slurry prior to pumping into the geotextile dewatering tubes.

- Inside the geotextile dewatering tubes the polymers helped the sediment solids to bind together and clump while water was released.

- This water migrated through pores in the woven fabric of the geotextile dewatering tubes to be collected within the dewatering platform.

- Cyclic filling of each geotextile dewatering tube to the maximum manufacturer-recommended fill height was performed until they were filled with sediment, then the geotextile dewatering tubes were disconnected from the feed-line and allowed to finish dewatering during a consolidating period.

- The suspended solids inside of the geotextile dewatering tubes continued to flocculate over time, allowing more water to release from the sediments.

- Dewatered sediment samples were collected from within the geotextile dewatering tubes to monitor the solids content and measure the dry-down of the dewatering sediment to assess when the geotextile dewatering tubes would be ready for load out and transport to the offsite disposal facility.

- As water was released from the sediment dewatering system, a transfer pump conveyed the filtrate from the dewatering platform to the water treatment system.

Polymer dosage was closely monitored to optimize the dewatering process. Treated effluent was monitored to confirm that polymer residuals were not discharged to the lake, as described in Section 3.8 of this Report.

The following changes to anticipated field conditions were encountered during operation of the sediment conditioning and dewatering system:

- **Additional Sediment Removal:** Additional geotextile dewatering tubes were utilized to accommodate the additional dredging in DMU-5 performed in response to the pre-confirmation sediment sampling and analysis results.

- **Organic-Rich Sediments:** Pockets of organic-rich sediment in deeper layers of the lake were encountered, which reduced the effectiveness of the polymer dosing predicted from the treatability studies.

- **Iron-Rich Sediments:** Dredged sediments contained higher than anticipated concentrations of naturally-occurring iron, which reduced the effectiveness of the polymer dosing predicted from the treatability studies and stimulated iron-reducing bacterial growth that resulted in accelerated bag binding (i.e. clogging of the geotextile dewatering tube pores).

The following adjustments were made to respond to these changes in field conditions: The dredge production rate was reduced to accommodate the reduced dewatering rate resulting from the organic-rich and iron-rich sediments, the polymer dosing was increased in response to the change in character of the sediment to be conditioned, and hydrogen peroxide scrubbing of the geotextile dewatering tubes was performed to reduce bag binding.

To meet project schedule constraints and comply with space limitations, the Contractor dewatered sediments in two batches. The first batch occurred between 14 May and 1 July 2013. The second batch occurred between 13 August and 26 September 2013. Each batch was followed by load out and transport of dewatered sediments to an offsite disposal facility, as described in Section 4. At the completion of off hauling operations the dewatering platform was deconstructed and the staging area restored as described in Section 5.

3.3.4 Filtrate Water Treatment

The filtrate treatment system was installed and operated in general accordance with the description provided in the RDIP and the Contractor's Dewatering and Filtering Plan submitted to the Trust for approval, which details the specific components and overall process flow implemented at the Site. The system components were described previously in this Report. Additional details related to the filtrate water treatment system and discharge water quality monitoring are contained in the BMP Plan (Appendix E of the RDIP) and the Dewatering and Filtration Plan submitted by the Contractor and approved by the Trust. The system layout in the staging area is shown on Figure 11 and a process flow schematic for the filtrate water treatment system is shown on Figure 12.

Following mobilization, system commissioning was performed using lake water prior to commencing with dredging operations in general accordance with the description provided in the RDIP. Minor leakage repairs and electrical adjustments were performed and dredge slurry was introduced to the dewatering and filtrate water treatment system on 14 May 2013. During dredging and dewatering activities, the dewatering and treatment system was maintained in a continuous mode of operation; with all equipment running uninterrupted and the filtrate fed to the treatment system at a continuous, controlled rate. The water treatment process generally proceeded as follows:

- Filtrate water from the geotextile dewatering tubes was collected and pumped into settling tanks for hydraulic equalization and coarse separation of debris and larger sediment particles.

- Clarified water from the settling tanks was pumped through the sand filters to remove suspended solids and associated COCs.

- Backwash water from the sand filters was pumped back into the dewatering platform to comingle with the geotextile dewatering tube filtrate.

- The process water continued under the driving force of the transfer pumps through bag filters and organo-clay/GAC filters to remove TPH compounds potentially remaining in the process water.

- Final treated effluent was discharged directly to the lake through piping similar to the dredge piping, in compliance with the discharge limits identified in the RDIP.

- The outlet of the effluent discharge pipe within the lake was situated to minimize submerged erosion of the sediment bed and the creation of additional in-lake turbidity.

The treatment system included instrumentation to measure and monitor flow rate and volumes, liquid levels, turbidity, and pressure. Influent and effluent samples were collected from the water treatment system to monitor and record the process performance. Treated effluent was monitored to confirm compliance with the Water Board's discharge requirements, as described in Section 3.8 of this Report. All discharge and sampling was performed in accordance with the monitoring plan presented in the BMP Plan (Appendix E of the RDIP).

3.4 Slope Stabilization

Although Caltrans' embankment stabilization project was performed to protect the roadway from failure during dredging, dredging activities had the potential to contribute to slope failure of the exposed eastern roadway embankment slope along the western edge of the lake. Slope stability analysis was performed as part of the dredging design, as documented in the Geotechnical Report prepared by Rollo & Ridley (Appendix D of the RDIP). Based on the results of the slope stability analysis, dredging along the western shore of the lake (DMU-4) was performed in limited slots staged such that open cut lengths would be limited and immediately backfilled with anchor rock to stabilize the submerged toe of slope of Highway 1 prior to commencing with the next adjacent slot.

Anchor rock consisted of clean rip rap imported from the Steven's Creek Quarry and meeting the gradation requirements specified in the Geotechnical Report (Appendix D of the RDIP) and Remedial Design Documents (see Appendix D for Contractor's submittal). Testing of anchor rock backfill was not performed, due to the size of the rock specified. Anchor rock was stockpiled in the east shore access area and loaded onto a barge with bin walls with an excavator. Anchor rock was placed in open water with an on-barge excavator so that the top surface was sloped at a 3:1 (horizontal:vertical) as required by the Remedial Design Documents and as shown on the typical cross section on Figure 22. Anchor rock installation activities were

observed by the project geotechnical engineer, Rollo & Ridley. The location of anchor rock placement is shown on Figure 21.

3.5 North Arm Sediment Excavation Operations

Sediment sampling and analysis was conducted on 5 February 2013, 22 through 29 May 2013, and 28 June 2013 in accordance with DTSC-approved work plans (Kennedy/Jenks 2013b, 2013c). Sediment sampling and data evaluation of the analytical laboratory results was documented in an amendment to the RDIP submitted to DTSC and the Water Board on 24 September 2013 (Amendment; see Appendix B).

The Amendment documents the extension of the remedial action described in the RDIP to the northwest portion of the Lake, in an area known as the North Arm (Figure 23). Sediment sampling was conducted onshore in the wetland area north of the surveyed extent of the Lake surface to determine if sediment in the North Arm had been impacted by storm drain discharge and to assess the need for sediment removal to meet the remedial action objectives identified in the RDIP. The Amendment presents the sampling methods, results, findings, and conclusions regarding sediment sampling performed in the North Arm to support the remedial action.

Given the depth-discrete results at the sampling locations within this area, impacted sediment was delineated to a depth of approximately five feet below the top of sediment (bts) in two areas adjacent to storm drain outlets. Based on the results of the sample analysis, sediment removal to a depth of five feet bts was proposed in the two areas of the North Arm, as shown on Figure 23. The Amendment presents the Contractor's proposed means and methods to remove contaminated sediments from the North Arm.

3.5.1 Site Preparation

The entire North Arm of Mountain Lake was covered in dense vegetation, generally characterized as willow riparian habitat and wetland vegetation in the Biotic Habitat Report (Appendix A of the RDIP). Access into the North Arm was required to facilitate sediment handling, loading, and off haul activities. Access was constructed from the existing trail into the North Arm. Access entailed additional vegetation clearing and construction of an access road.

- **Additional Vegetation Clearing:** Above ground vegetation was removed to facilitate access and excavation. However, to encourage re-growth many of the willow root balls were left intact. Vegetation removals were limited to the contaminated areas and the access road, as shown on Figure 23. Organic topsoil was stripped within the drier upland areas and stockpiled for use during site restoration.

- **Access Road:** An access road was constructed to provide a means of ingress/egress to the excavation areas, which were located in the southern portion of the North Arm, adjacent to the lake water surface boundary. To support heavy construction equipment, the Contractor used wooden crane mats and aggregate base rock to construct a stable access route and working surface. The crane mats were placed in the wet areas to the south and west of the North Arm. Base rock was used in the drier upland areas to the north and east portions.

Following completion of the remedial activities, the access road was removed by removing and cleaning crane mats for use on future projects and the site restored to pre-construction topography in preparation for stabilization with erosion controls and plantings.

3.5.2 Excavation Operation

The excavation operation was implemented using conventional earthwork equipment, including shoring, excavators, dump trucks, and pumps for dewatering the area.

- **Shoring:** Use of shoring to support the sediment removal operation was recommended following geotechnical consideration of the materials and proximity of sediment removal areas to Highway 1. Installation of steel sheet piles was intended to provide structural support in the two sediment removal areas during excavation activities. Steel shoring was mobilized to the Site from Highway 1 under traffic control and installed around the perimeter of the contaminated soil areas, creating two separate cofferdams.

- **Diversion and Dewatering:** Groundwater was generally present just below the ground surface with some seepage expressed to the north of the northern cofferdam. Water was managed during excavation activities in two ways:

  - ***Diversion –*** The contractor installed an upgradient diversion system that intercepted flow at the catch basin located at the southern edge of the trail at the northern tip of the North Arm. Additional flow was intercepted downstream of the catch basin at the outlets of two 18-inch storm drain pipes within the North Arm. Caltrans subsequently abandoned the lower of these two pipes. Diverted flow was conveyed to the treated filtrate discharge pipeline for discharge directly to the lake.

  - ***Dewatering –*** Each cofferdam was dewatered to facilitate soil mixing and excavation. A gravel sump was constructed in each cofferdam to facilitate dewatering using a sump pump. Water generated during the dewatering process was pumped into the existing filtrate water treatment system in the staging area prior to discharging to the lake via the treated filtrate discharge pipeline.

  The Contractor's estimated diversion and dewatering rate was approximately 200 gpm. A layout of the diversion and dewatering system is shown on Figure 24 and a schematic detail of the dewatering system is shown on Figure 24.

- **Soil Stabilization and Mechanical Excavation:** A conventional excavator was used to mechanically mix and excavate sediment from the sediment removal areas within each cofferdam. The Contractor estimated that approximately one to five percent quick lime was added to the sediment by weight to meet the moisture limits of the landfill. The amended soil was excavated and loaded directly into trucks for transfer to an intermediate handling area within the Presidio (i.e. the Nike Site) between 13 November and 4 December 2013.

  No confirmation sampling and analysis was conducted. Shoring precluded sidewall sampling and the preponderance of site characterization data indicated that contamination did not extend deeper than four feet. The depth of excavation extended to five feet, which was beyond the deepest contaminated sample. Given the presence of gravel at MLSE 310,

which was likely placed as part of original drainage improvements, it is unlikely that sedimentation with roadway runoff particles were deposited below the gravel layer.

- **Stockpiling and Disposal:** Due to the limited availability of trucks capable of accessing the North Arm, excavated soil was transferred to the Nike Site within the Presidio for temporary stockpiling prior to loading for transport to an offsite disposal facility. Stockpiles were maintained on a sand base lined with 60-mil HDPE sheeting, confined by K-rail, and covered with plastic sheeting. Some water expressed from sediment during stockpiling and some rainwater runoff were contained for disposal, as described in Section 4. Waste profiling and offsite disposal operations are further described in Section 4.

3.5.3 Site Restoration

Following removal of contaminated sediment, the two excavations were backfilled to restore pre-construction grades. The excavations were located at the base of a slope supporting Highway 1. Due to the proximity of the highway, the project geotechnical engineer recommended restoration of original grades and backfill with sand. Sand posed other issues related to geomorphology and biology, which were addressed in consultation with the Trust Natural Resources, the project biologist, HT Harvey, and the project hydrologist, Balance Hydrologics, Inc.

- **Backfill and Compaction:** Based on geotechnical considerations, the two sediment removal areas were backfilled to original grade with clean import sand, in accordance with the Remedial Design Documents. Clean backfill was sourced from existing Trust stockpiles of clean sand designated as horticulturally suitable backfill for use in planting areas within the Presidio. Analytical laboratory reports for the import sand are provided in Appendix I. Backfilling and compaction were performed in accordance with the Remedial Design Documents and the testing results are provided in Appendix J. Following the completion of backfilling, surface deposits were decompacted to facilitate re-vegetation.

- **Erosion Control:** Erosion controls were installed, including log-weir structures, erosion control fabric, and fiber rolls to stabilize the disturbed ground surface. Organic material salvaged during site preparation was distributed onsite to facilitate restoration.

- **Re-Vegetation:** Native plants will be replanted from harvested species and the Trust Nursery to facilitate re-establishment of the existing habitat. Site restoration will be conducted in accordance with the FS/RAP and RDIP, and habitats and land uses specified in the VMP and PTMP.

Additional details regarding site restoration are presented in Section 5.

3.6 Pre-Confirmation Sediment Sampling and Analysis

Pre-dredging confirmation sediment sampling and analysis (pre-confirmation sampling) was conducted in April 2013. Pre-confirmation sediment sampling and data evaluation of the analytical laboratory results was documented in the letter report submitted to DTSC and the Water Board on 19 August 2013 (see Appendix K).

The confirmation sampling was originally scheduled to follow dredging and was intended to determine if additional dredging or capping activities would be required to manage potential dredging residuals, as discussed in the RDIP. To better manage risk by finalizing the dredging quantities and expediting the implementation schedule, the Trust requested DTSC and the Water Board approval to perform confirmation sampling before dredging. DTSC and the Water Board approved the confirmation sampling plan modifications: Instead of collecting samples at the newly-dredged surface, the modified confirmation sampling plan involved coring down to the depths that would represent the expected final dredge surface. The basic confirmation sampling plan as detailed in the SAP (Appendix F of the RDIP), was not changed.

3.6.1 Sample Collection and Analysis

Confirmation sampling and analysis was conducted as follows:

- **Number and Location:** Confirmation sediment samples were collected from depths below the dredging limits on an approximate 100-foot by 100-foot grid spacing with additional samples collected around the perimeter of the dredge limits, as identified in the SAP, with minor adjustments to accommodate the Contractor's dredge management zones and lake level. Based upon the initial dredging limits, 35 confirmation sample locations were sampled within and around the dredging limits. Confirmation sediment sampling locations are shown on Figure 25.

- **Procedures:** Sediment sampling was performed in accordance with the procedures identified in the SAP. Sediment cores were collected from each location using a vibracore device deployed from the sampling vessel, which was navigated to sampling locations using a pre-programmed portable GPS unit. To help assure adequate recovery, sediment cores were up to 10 feet long. Upon retrieval the projected post-dredging sediment surface was marked on the core and samples were collected from the top, middle, and bottom six (6) inches of the two feet of sediment below the projected post-dredging surface. Samples were transferred into glass jars that were capped and labeled for identification. The upper 6-inch sample was initially analyzed at each location in accordance with the SAP. Where concentrations of lead and/or TPHmo exceeded the cleanup level, then the middle and bottom core samples were analyzed to provide information on the thickness of potential undredged inventory. Select confirmation sediment samples were also analyzed for cadmium, antimony, copper, and zinc, in accordance with the SAP.

- **Analyses:** The samples were submitted to Curtis & Tompkins Laboratories in Berkeley for analysis of total metals by EPA Method 6020, TPHmo by EPA Method 8015 with silica gel cleanup, and moisture content by ASTM D2216.

- **QA/QC:** Field QA/QC included collection of equipment rinsate blanks, collection of one decontamination source water blank, and analysis of three duplicate sediment samples. Field quality control samples were analyzed per the same analytical method used to analyze the parent samples. No analytes were detected in the rinsate blanks nor in the source water blank.

3.6.2 Results and Data Evaluation

The confirmation sample analytical results are summarized in Table 3. Results of confirmation sediment sample analyses were compared to cleanup levels listed in the FS/RAP and RDIP to assess whether contaminant concentrations in sediments remaining following dredging would be present at levels that pose a risk to the environment and to assess if further dredging would be necessary.

- **Lead:** Lead was detected at concentrations exceeding the cleanup level (82 milligrams per kilogram [mg/kg]) at five locations. These locations were contiguous and delineated an area of deeper sediment in the central-eastern portion of the lake.

- **TPHmo:** TPHmo was detected at concentrations exceeding the cleanup level (144 mg/kg) at 27 locations at concentrations ranging from 160 to 3,400 mg/kg and at depths ranging from 3 feet bts to 8.5 feet bts (which is believed to be within the pre-development sediment zone, i.e. not impacted by roadway runoff).

  The widespread presence of TPHmo concentrations exceeding the cleanup level was not consistent with pre-dredge remedial investigation data. Because the analytical method for quantifying TPHmo does not separate petroleum compounds from non-petroleum organics that may be naturally occurring and unaffected by silica gel cleanup, analytical results were further evaluated. Zymax Environmental Forensics Solutions performed a GC/MS full scan analysis on samples from five locations, which were evaluated by Zemo and Associates for the presence of discrete peaks and unresolved complex mixtures to provide expert interpretation of the nature of the organic material reported as TPHmo.

  Based on the chromatogram evaluation and forensic analysis, two distinct populations of samples were identified: those in which vegetative material and plant debris are the source of the reported TPHmo concentrations (referred to as Population A in the 19 August 2013 report) and those in which petroleum product largely contributes to the reported TPHmo concentrations (referred to as Population B in the 19 August 2013 report).

  The chromatogram and forensic analyses indicated that samples collected from only nine locations contained TPHmo concentrations dominated by petroleum products (Population B). Three of these did not exceed the cleanup level; one area was to be covered with rip rap following slope stabilization in DMU-4. The remaining five locations were co-located with lead exceedences, in a contiguous area of deeper sediment in the central-eastern portion of the lake.

- **Other Metals:** Antimony and cadmium were not detected in the samples, copper was not detected at concentrations exceeding its cleanup level, and zinc was detected in nine samples, two of which exceeded the cleanup level.

The risk evaluation performed using the data indicated that following dredging to the proposed limits identified in Figure 2 of the 19 August 2013 report, which included additional dredging to address lead and Population B TPHmo in sediment, would result in post-remediation sediment conditions that would not pose a significant risk to ecological species at Mountain Lake.

3.6.3 Additional Dredging

As discussed above, pre-confirmation samples identified an area of deeper sediment in the central-eastern portion of the lake containing COCs at concentrations exceeded the cleanup levels, as shown on Figure 2 of the 19 August 2013 report. The additional impacted sediment extended to an additional one to three feet below the initial dredge template. DTSC was consulted on the results of confirmation sampling and analysis and approved the additional dredging limits. Additional dredging to a total depth of 5.5 feet bts was conducted in this area, which was designated as DMU-5.

3.7 Verification Sediment Sampling and Analysis

Following dredging activities, the agitating action of the dredge cutter head had the potential for re-suspending contaminated sediments such that a thin layer of dredging residuals (generated residuals) could persist at the sediment surface. Post-dredging verification sediment sampling was conducted to assess the potential presence of generated residuals due to sediment particles suspended during dredging and determine if placement of a sand dilution layer would be required to meet the RAOs. The sampling and data evaluation of the analytical laboratory results was documented in the letter reported submitted to DTSC and the Water Board on 16 December 2013 (see Appendix L).

3.7.1 Sample Collection and Analysis

A waiting period based on prior column settling testing (URS 2011) and water quality monitoring (see Appendix M) was observed to allow re-deposition of suspended particles and then verification sampling and analysis was conducted as described in the RDIP. Verification sampling and analysis was conducted as follows:

- **Number and Location:** Post-dredging verification sediment sampling and analysis was conducted in October 2013 in general accordance with the SAP. Verification sediment samples were collected from the post-dredging lake bottom on an approximately 100-foot by 100-foot grid spacing. Based on the initial dredging limits, 20 post-dredging verification sample locations were sampled within the dredging limits, as shown on Figure 26.

- **Procedures:** Sediment cores were collected from each location using a vibracore device deployed from the sampling vessel, which was navigated to sampling locations using a pre-programmed portable GPS unit. A group of three cores was collected at each location, as required to provide sufficient sediment volume for laboratory analysis. At each location, the upper-most section of the core was visually inspected to qualitatively assess the presence of generated residuals and then a sample from the top three (3) inches of each sediment core was collected and composited into glass jars that were capped, labeled for identification, and transported to the laboratory under chain-of-custody procedures for COC analysis in accordance with the SAP.

- **Analyses:** Post-dredging verification sediment samples were analyzed for the principal COC, lead; TPHmo was not analyzed due to the widespread presence of naturally occurring organics. Samples were submitted to TestAmerica laboratories in Pleasanton for analysis of total lead by EPA Method 6020 and moisture content by ASTM D2216.

- **QA/QC:** Field QA/QC included collection of two duplicate samples and two equipment rinsate blanks. Field quality control samples were analyzed per the same analytical method used to analyze the parent samples as identified above. Lead was detected in one equipment blank at 1 µg/l.

3.7.2 Results and Data Evaluation

The verification sample analytical results are summarized in Table 4. The RDIP and SAP required that the concentrations remaining in sediment after dredging, including results from historical, pre-confirmation, and verification sampling and analysis, be evaluated to assess the potential future risk to ecological receptors. Lead was detected at concentrations exceeding the cleanup level (82 mg/kg) at seven (7) of the 20 verification sampling locations, at concentrations ranging from 84 to 330 mg/kg. In accordance with the United States Environmental Protection Agency (USEPA) guidance (1992) and consistent with the risk evaluation in the FS/RAP, the 95 percent upper confidence limit (95 percent UCL) of the arithmetic mean lead concentration in sediment was used to evaluate potential exposures. Verification, pre-confirmation, and historical sediment data within the upper 3.5 feet of the sediment surface remaining following dredging were included in the data set used in the 95 percent UCL calculations because the uppermost approximately 3 feet of sediment is considered available to organisms.

As described and tabulated in the 16 December 2013 report, the calculated 95 percent UCL for lead in the upper 3.5 feet of sediment is 49 mg/kg, less than the freshwater sediment cleanup level for Mountain Lake (82 mg/kg), which is based on ecological freshwater sediment criteria and background metals concentrations (Kennedy/Jenks 2012a). Therefore, lead concentrations in remaining sediment will not pose a significant risk to ecological species at Mountain Lake. TPHmo is also not expected to pose a significant risk as sediment samples where petroleum product largely contributes to the reported TPHmo concentrations were collocated with lead concentrations above its cleanup level and were removed from the lake during dredging operations.

DTSC was consulted on the results of verification sampling and analysis and concurred that concentrations of COCs remaining in Mountain Lake sediment do not pose a significant risk to ecological species and no additional remedial measures were required to address COCs in sediments.

3.8 Construction Monitoring and Mitigation Measures

Construction monitoring activities were performed to facilitate quality construction, protect existing resources, and mitigate construction impacts. These construction monitoring and mitigation measures included:

- Deliberate communication with stakeholders and the project team.
- Construction quality control monitoring.
- Maintaining natural and cultural resource protection measures.
- Establishing and complying with health and safety protocols.

- Monitoring and controlling equipment noise.
- Perimeter air monitoring and dust control during off hauling operations.
- Stormwater management and erosion and sediment control.
- Water quality monitoring.

Additional details related to the construction monitoring and mitigation measured implemented during construction are as follows.

3.8.1 Construction Communications

Construction communications included public outreach, construction meetings and inspections, and field documentation:

- **Public Outreach during Construction:** Project updates were provided during the monthly RAB meetings, and during meetings with the stakeholders. A notification email was sent out at project milestones, as appropriate, describing key implementation activities such as results of confirmation and verification sampling and analysis, scheduling of off haul activities, and general progress of the remediation activities.
- **Project Meetings:** A project kickoff meeting was held and weekly construction meetings were scheduled generally on Tuesdays to discuss schedule, design clarifications, and overall progress of construction. Other meetings were held as needed.
- **Field Inspections and Documentation:** The Trust's Construction Manager (CH2M HILL) provided construction management and onsite observations. Geotechnical inspections were performed by Rollo and Ridley, Inc. Daily reports are included in Appendix H.

3.8.2 Construction Quality Control

Construction quality assurance (CQA) activities included monitoring dredging activities, monitoring placement of fill, and monitoring compaction during site stabilization. Earthwork activities were performed in accordance with the recommendations of the Geotechnical Report (Appendix D of the RDIP) and under the observation of the project geotechnical engineer, Rollo & Ridley. Test results for geotechnical sampling and analysis of fill material and compaction conducted in response to requirements of the Remedial Design Documents are provided in Appendix J.

- **Site Preparation and Restoration Earthwork:** The east shore access and staging area were graded to provide proper grades, drainage, and protection from erosion, as necessary. Import fill was placed in the staging area to facilitate in-place protection of historic foundations and construct the dewatering platform. Sand backfill was placed in the North Arm following sediment excavation. Disturbed soils in upland areas were decompacted to facilitate replanting. Compaction testing was performed by Rollo & Ridley and the test results are included in Appendix J.

- **Survey Control:** Survey control was shown on the Remedial Design Documents, including control point and benchmark data. The horizontal coordinate system for the project is NAD 83 Zone 3 and the vertical is NAVD88. The original ground survey was completed by Towill Surveying, Mapping, and GIS Services. The Contractor checked grades during earthwork activities using a portable GPS unit. The Contractor performed multiple progress bathymetric surveys.

- **Dredge Production Rates and Efficiency:** The dredge production was reviewed on a daily basis and feedback was provided to the dredge operators and crews to maintain maximum production rates in conjunction with the dewatering systems and mechanical limitations of the processing system. Dredge instrumentation also provided real time data allowing the dredge operator to optimize production rates. Daily dredge logs were maintained and are included in Appendix H.

- **Dredge Volume:** Throughout the dredging program, the Contractor maintained a running count of cubic yards dredged. This count was updated following progress hydrographic surveys of the dredge areas. This volume was calculated by generating surface models of the points files created from the pre-dredge and progress hydrographic survey data files. The Contractor used the HYPACK TIN model program to calculate volume removed following the completion and processing of each hydrographic survey. Updated dredge volumes were posted on the Contractor's progress hydrographic survey maps, included in Appendix G.

- **Hydrographic Surveying:** The Contractor conducted routine hydrographic surveys of the dredge areas to confirm the dredging progress with respect to target removal depths. A post-dredging hydrographic survey was performed to document the total removal of sediment from Mountain Lake. A final hydrographic survey was performed following re-contouring activities to document the final bathymetry for the lake bottom. The post-remediation bathymetry is shown on Figure 17, the re-contoured bathymetry is shown on Figure 27, and as-built surveys provided by the Contractor are included in Appendix G.

- **Hand Lead Line Spot Checks:** The Contractor performed periodic checks of the depth left behind following passage of the dredge, especially in shallow draft areas around the perimeter of the lake. Checks were conducted using a hand lead line constructed in accordance with Chapter 8 of USACE Publication EM 1110-2-1003, Engineering and Design – Hydrographic Surveying. The Contractor measured the depth of the dredge cut and provided feedback to the dredge operator to ensure that dredge depth control was being maintained between hydrographic surveys.

3.8.3 Natural Resource Protection

A summary description and mapping of biotic habitats in and around the immediate area of Mountain Lake was included in the Biotic Habitat Report (Appendix A of the RDIP). HT Harvey provided a qualified biological monitor, as needed, during construction activities within or near sensitive habitat, including native plant habitat near the eastern shore of the lake and potential wetland habitat around the perimeter of the lake.

The biological monitor provided the following services to facilitate protection of natural resources in and around the lake:

- Trained the construction manager and construction workers in the identification and ecological needs of nearby sensitive species.
- Assisted in determining the alignment for protective high-visibility fencing to exclude construction activities from sensitive habitat.
- Periodically monitored sensitive habitat near the Site and recommend realignment of exclusionary fencing, as needed.
- Noted potential impacts to aquatic and terrestrial fauna due to the construction activities.

Natural resource monitoring reports are included in Appendix C.

3.8.4 Cultural Resources Protection

The Contractor monitored operations for the presence of previously unidentified archaeological resources, as defined in the Trust's Archaeological Management Assessment (Appendix B of the RDIP). Specific monitoring and mitigation measures implemented to protect known and potential cultural resources included:

- The dewatering platform design was modified to accommodate a historic foundation wall, as previously described.
- Test trenches were dredged near the eastern shoreline and monitored by Trust archaeological staff for potential Native American deposits, as previously described.
- Additional historic foundations were discovered during restoration grading in the staging area. Following consultation with Trust archaeological staff, these foundations were exposed at grade and the restoration grading plan revised to minimize earthwork in and around the foundations.

No other cultural resources were encountered during the construction activities.

3.8.5 Health and Safety

The Contractor submitted a project-specific Health and Safety Plan (HASP) in conformance with the general requirements of OSHA standards for hazardous waste operations (29 CFR 1910.120) that included a hazard evaluation, protective equipment and security measures, chemical exposure information, monitoring procedures, emergency response procedures, and general work and safe equipment use procedures.

3.8.6 Noise Monitoring and Control

Construction noise impacts were confined to the equipment engines required to power the vessels, access and staging area preparation equipment, and sediment handling and processing equipment, including:

- Dredge vessel.

- Support barge.
- Personnel vessels.
- Excavators and other earthwork equipment.
- Dump Trucks.
- Pumps.

Construction noise impacts were minimized through the use of best available noise control techniques, including the use of mechanical equipment that complies with the most recent California Department of Transportation standards. Noise levels for construction equipment were limited and the Trust spot checked decibel readings during the initial commencement of particularly noisy operations (e.g. start up of the dredge). Excessive noise levels were not noted by the Trust's Construction Manager.

3.8.7 Perimeter Air Monitoring and Dust Control

To mitigate the potential for fugitive dust emissions at the perimeter of the Site during sediment handling and off hauling, perimeter air monitoring and dust and odor control practices were implemented in accordance with the Perimeter Air Monitoring Plan (Appendix G of the RDIP) and the Remedial Design Documents.

- **Dust Control:** The Contractor submitted a Dust Control Plan for Trust approval and implemented dust control measures in accordance with the RDIP and Remedial Design Documents during upland earthwork and off hauling operations. Dust was controlled by applying water to grading areas and haul roads using a water truck. Application was conducted when indicated by the dust monitors around the site (see discussion below), or when dust was observed.

- **Perimeter Air Monitoring:** Air monitoring during construction was performed by Kennedy/Jenks and included the use of air monitors to measure dust concentrations. Weather conditions were recorded using a portable weather station located onsite. Monitoring locations are shown on Figure 28. The procedures for perimeter air monitoring were described in the Perimeter Air Monitoring Plan (Appendix G of the RDIP). Perimeter air monitoring consisted of continuous monitoring during sediment loading and off hauling activities using stationary air monitors installed around the perimeter of the site, and perimeter walks around the site using a handheld air monitor. Raw data from the stationary air monitors were downloaded at the end of each workday, and next-day summaries conveyed to the Contractor, as needed. Data from the handheld air monitor were not downloaded, but stabilized readings exceeding project action levels were recorded on field forms and discussed with the Contractor, as needed. Monitoring results were generally less than the allowable dust action level and no odors were noted.

A summary of perimeter air monitoring results and the effectiveness of dust control practices during the first batch off hauling operations was prepared and submitted to DTSC and the Water Board on 2 October 2013 and is included in Appendix N. Based on the monitoring results, further perimeter air monitoring was not required for subsequent off hauling operations.

3.8.8 Stormwater Management and Erosion Control

The Contractor prepared a SWPPP in substantial compliance with the regulatory requirements for construction stormwater pollution management and in conformance with the Remedial Design Documents. The SWPPP was prepared by the Contractor's Qualified SWPPP Developer (QSD) and the implementation of erosion and sediment controls was directed by the Contractor's Qualified SWPPP Practitioner (QSP):

Following the Trust's review of the SWPPP, the Contractor employed Best Management Practices (BMPs) to reduce the sediment load in runoff from the Site. Stormwater management and erosion control measures were implemented as follows:

- Run on control in the staging area was provided by a temporary drainage swale around the perimeter of the dewatering platform, which directed incoming stormwater from the uphill area of the staging area to existing drainage structures, including the culvert that discharges to the lake.

- Stormwater control devices (diversion ditches, hay bale barriers, fiber rolls, and silt fence) were installed around the perimeter of the Site, and existing storm drains and culverts were protected with rip rap, hay bales, and fiber rolls.

- Fiber rolls and straw bales were placed along topographic contours to minimize run on to and runoff from the access and staging areas. The Contractor used certified weed-free erosion control measures such as sterile straw bales or certified weed-free wattles.

- Sediment tracking controls along access routes and haul roads were implemented, including construction entrances and exits at the access and staging areas. Drainage inlet filters were installed to protect storm drains in the vicinity of the access routes and haul road.

- Dust control practices were implemented in accordance with the RDIP, as required in the Remedial Design Documents, and as described in the Contractor Dust Control Plan. Stockpile management included dust control measures consistent with the RDIP, including daily covering of stockpiles with plastic sheeting.

- Non-stormwater best management practices were implemented in accordance with the Contractor's SWPPP to address materials and equipment storage and handling within the limits of work.

- Material stockpiled for further characterization after dredging and dewatering was held in a designated stockpile staging area and contained in the geotextile dewatering tubes or covered with plastic sheeting.

- Fuel and chemicals were stored in contained areas to prevent accidental spills from being released to the environment and/or impacting stormwater.

Regular inspections were conducted by the Contractor's QSP to maintain, adjust, and update the stormwater pollution controls implemented as described in the Contractor's SWPPP.

3.8.9 Sediment Re-Suspension Management and Water Quality Monitoring

Control measures were implemented to minimize impacts to the lake water quality during dredging activities. In an effort to minimize re-distribution of potentially contaminated sediments into un-impacted areas of the lake, the Contractor took precautions to reduce suspended sediment in the water column, and prevent the spread of re-suspended sediments. Steps taken to achieve this goal were as follows:

- **Lower Ladder Speed:** The dredge operator employed slower ladder swing speeds and advanced the dredge at a slower speed to optimize the collection of sediment during dredging. Operating the ladder and vessel at slower speeds helped maintain overlapping arcs of the cutterhead during dredging to avoid windrows of material left in place and advective transport of suspended sediments.
- **Lower Cutter Speed:** Dredge operators employed lower cutter speeds, which resulted in efficient cutting of the material to be removed from the lake. Operating the cutter at lower speeds helped minimize the turbulent flow around the suction and the velocity of sediments being stirred up by the rotating action of the cutterhead. Reducing the turbulence and velocity allowed dredged sediments to be drawn into the suction rather than escaping to the surrounding water.
- **Turbidity Curtains:** The Contractor deployed turbidity curtains in the lake to protect the beach along the south shore of the lake and overflow pipeline areas of the lake. The turbidity curtains were relocated as necessary to accommodate the Contractor's dredging patterns and to confine discharge locations during dredging and effluent discharging.

Water quality monitoring was performed during construction to monitor the effects of sediment re-suspension and release, the effectiveness of sediment re-suspension management practices, and confirm the timing for verification sediment sampling following completion of the dredging operations. In-lake turbidity monitoring was conducted prior to construction between November 2012 and January 2013, during the initial two weeks of dredging operations between May and June 2013, and at the completion of dredging operations in October 2013. Turbidity monitoring and data evaluation of results was documented in the letter report submitted to DTSC and the Water Board on 4 November 2013 (see Appendix M).

- **Pre-Construction:** The results of pre-construction turbidity monitoring conducted prior to the first phase of dredging indicated that in-lake turbidity is naturally highly variable, with some values exceeding 40 NTU.
- **Construction:** In-lake turbidity measured during the first two weeks of dredging ranged from approximately 5 to 128 NTU, representing a modest increase over pre-construction conditions and indicating that the sediment re-suspension management practices employed by the Contractor were effective.
- **Post-Construction:** The results of post-construction turbidity monitoring conducted over a two-week settling period following dredging indicated that the turbidity impacts were relatively brief, having returned to pre-construction levels.

In-lake turbidity monitoring data are summarized in Table 5.

3.8.10 Filtrate Discharge Water Quality Monitoring

The Water Board identified the following limits for discharge into Mountain Lake, as presented in the RDIP:

Constituent	Daily Maximum	Weekly Average	Monthly Average	4-Day Average
Total Suspended Solids (TSS)	---	45 milligrams per liter (mg/l)	30 mg/l	---
Turbidity	40 NTU	---	---	---
Lead	--	---	---	2.5 micrograms per liter (µg/l)

The Water Board also requested that water discharged during dewatering be tested for residual polymer concentrations.

Both water treatment process performance monitoring and discharge limit monitoring were performed by the Contractor during sediment dewatering and filtrate treatment operations.

- **Process Performance Monitoring:** Water samples were collected from the various water treatment process units and analyzed via field and laboratory methods, as needed, to provide the equipment operators with information required to meet the discharge limits.

- **Discharge Limit Monitoring:** Water samples were collected and analyzed for the site-specific chemical constituents, lead, zinc, TPHd, TPHmo, total suspended solids, and residual polymer, at the effluent from the treatment system as it discharges into the lake. A surrogate physical parameter, turbidity, was also measured as a real-time tool to help evaluate the discharge water quality.

Filtrate discharge water quality monitoring was performed in accordance with the BMP Plan (Appendix E of the RDIP) and the Dewatering and Filtering Plan submitted by the Contractor for Trust approval. Filtrate discharge monitoring and data evaluation of results was documented in the letter report submitted to DTSC and the Water Board on 30 July 2013 (see Appendix O).

During the first phase of dredging, the treatment system was operated for nine weeks with field measurements and sampling for laboratory analysis conducted in accordance with the monitoring frequency and schedule presented in the BMP Plan:

- Influent and effluent turbidity was measured hourly during dredging operations using a handheld meter.

- Effluent lead concentration was field screened hourly during dredging operations using a field spectrometer.

- Effluent samples were collected daily for laboratory analysis of total suspended solids (TSS), lead, zinc, total petroleum hydrocarbons as motor oil (TPHmo) and diesel (TPHd), and residual polymer during the first two weeks of operation and then weekly for the following seven weeks of operation.

Following is a summary of the field and laboratory analytical results collected during effluent monitoring activities conducted during the first phase of dredging.

- **Lead:** Laboratory and field lead results did not exceed the discharge limit required by the Water Board, which was based on a 4-day average lead concentration of 2.5 µg/l.

- **Turbidity:** Turbidity measurements were well below the discharge limit required by the Water Board (40 NTU daily maximum) and comparable with the background turbidity in the lake.

- **Petroleum Hydrocarbons:** TPHd and TPHmo were not detected at concentrations equal to or exceeding the Presidio surface water cleanup level for both constituents (443 µg/l) in any of the effluent water samples submitted for laboratory analysis.

- **Zinc:** Zinc was not detected at concentrations equal to or exceeding the Presidio surface water cleanup level (120 µg/l) in any of the effluent water samples submitted for laboratory analysis.

- **Total Suspended Solids:** TSS was not detected above the discharge limit required by the Water Board (45 and 30 mg/l over a weekly and monthly average, respectively) in any of the effluent water samples submitted for laboratory analysis.

- **Polymer Residual:** Residual polymer was not detected above the laboratory reporting limit in any of the effluent water samples submitted for laboratory analysis.

Field monitoring results and laboratory analytical results indicated that the filtrate treatment system reliably produced effluent water quality meeting the water quality discharge limits for the project. Filtrate discharge water quality monitoring data are summarized in Table 6. Laboratory analytical reports and field logs are included in Appendix O.

Based on the effectiveness of the filtrate treatment system, as documented by the low effluent concentrations, and the consistency of the monitoring results, the monitoring program was adjusted to discontinue sampling for laboratory analysis, with field monitoring continuing unchanged. DTSC was consulted on the results of water sampling and analysis and concurred with the adjusted monitoring program.

3.9 Waste Classification and Off Hauling

Both federal and state standards were considered in the waste classification. The federal standards were developed pursuant to Resource Conservation and Recovery Act (RCRA) and are found in Title 40 of the Code of Federal Regulations (40 CFR). State regulations are in Title 22 of the California Code of Regulations (CCR). Because RCRA and Title 22 methods and standards differ in some respects, it is possible for a material to be classified as a hazardous

waste in California but not classified as a hazardous waste under RCRA (i.e., non-RCRA hazardous waste).

The Contractor collected sediment samples in cooperation with the landfills and prior to dredging, to obtain profiles of the material in advance and enable direct-loading of trucks following sediment dewatering. The samples were submitted to Curtis & Tompkins Laboratories of Berkeley, California, for analyses requested by the landfills. Profiling and approval was conducted in cooperation with the following disposal facilities:

- Republic Services (Ox Mountain Landfill, California) for non-hazardous waste.
- Clean Harbors (Buttonwillow Landfill, California) for non-RCRA hazardous waste.
- US Ecology (Beatty Landfill, Nevada) for RCRA hazardous waste.
- Seaport Environmental (Redwood City) for non-hazardous liquid waste.

Solid waste may be hazardous based on its origin or whether it displays hazardous characteristics of ignitability, reactivity, corrosivity, or toxicity. Sediments at the Site do not exhibit ignitability, reactivity, or corrosivity based upon the physical characteristics of the material, so the classification assessment depended upon toxicity characteristics:

- The toxicity characteristic was based upon either comparing the total concentration of specific chemicals to RCRA and state criteria, or analyzing samples by leaching tests, analyzing the leachate, and comparing the results to the applicable leaching criteria.
- The RCRA leaching criteria were derived from the Toxicity Characteristic Leaching Procedure (TCLP) test and the Title 22 leaching criteria (Soluble Threshold Limit Concentration [STLC] values) were derived from the Waste Extraction Test (WET). Both tests are intended to mimic potential leaching in a landfill, and involve extracting a leachate from the sample with an acidic solute and chemically analyzing the leachate by the applicable method for specific chemicals. The two tests use different acids as solutes, which can yield different results when the leachates are analyzed.
- The analytical results from the leachates were compared to the TCLP and STLC values for specific chemicals, where values that exceeded the STLC indicated the material would be a hazardous waste in California due to the specific chemical and values that exceeded TCLP values were considered a RCRA waste.

A detailed description of waste profiling and offsite disposal operations in provided in Section 4.

Section 4: Waste Profiling and Disposal

The results of waste profiling and subsequent offsite transport and disposal are discussed in detail below. Copies of the laboratory results, and waste profiles are included in Appendix P. Profiling and approval for non-hazardous waste was conducted through Republic Services (Ox Mountain Landfill). Profiling and approval for non-RCRA hazardous waste was conducted through Clean Harbors (Buttonwill Landfill). Profiling and approval for RCRA hazardous waste was conducted through US Ecology (Beatty Landfill, Nevada).

4.1 Sampling and Analysis

The Contractor oversaw collection and analysis of in-place samples to profile the material in conjunction with the chosen landfills prior to dredging and excavation. Sample collection and submittal to Curtis & Tompkins Laboratories in August 2012, July 2013, and August 2013 allowed the material to be profiled for disposal prior to dredging and excavation and allowed the Contractor to load the material directly into trucks for transportation to the appropriate disposal facilities, generally avoiding interim stockpiling. Following is a summary of profile sampling and analysis conducted to facilitate sediment and import fill disposal.

- **Initial Dredge Template (DMU-1 through DMU-4):** The Contractor performed sediment sampling and analysis to pre-profile dredged sediments for offsite disposal. Based on the estimated volume of in situ sediments to be removed, the Contractor collected 21 sediment cores at the locations shown on Figure 29. Each core was depth composited and analyzed for the following constituents:

  - Total Petroleum Hydrocarbons (TPH) as gasoline, diesel, and motor oil.
  - Benzene, toluene, ethylbenzene, and xylenes (BTEX).
  - Leaking Underground Fuel Tank (LUFT) metals, including cadmium, chromium, lead, nickel, and zinc.
  - Pesticides.

  The pre-profiling analytical results are summarized in the Treatability Study attached to the BMP Plan (Appendix E of the RDIP) and Table 7. TPH gasoline, BTEX, and pesticides were not detected in any sample at concentrations equal to or greater than the laboratory reporting limit. TPH diesel was detected in all samples at concentrations ranging from 13 to 67 mg/kg. TPH motor oil was detected in all samples at concentrations ranging from 49 to 190 mg/kg. Each of the LUFT metals was detected at concentrations exceeding the laboratory reporting limits, but only cadmium and lead were detected at concentrations warranting solubility analysis. Only one of six samples analyzed by the WET exceeded the STLC limit for lead and none of the samples exceeded the STLC limit for cadmium.

- **Additional Dredging (DMU-5):** The Contractor performed sediment sampling and analysis to pre-profile dredged sediments for offsite disposal. Based on the area of additional dredging identified during pre-confirmation sediment sampling and analysis described in Section 3, the Contractor collected five sediment cores at the locations shown on Figure 29.

Depth discrete sampling was performed at each location and samples were analyzed for the following constituents:

- TPH diesel and motor oil.
- BTEX.
- LUFT metals, including cadmium, chromium, lead, nickel, and zinc.
- Pesticides.

The pre-profiling analytical results are summarized in Table 7. BTEX and pesticides were not detected in any sample at concentrations equal to or greater than the laboratory reporting limit. TPH diesel was detected in all samples at concentrations ranging from 10 to 34 mg/kg. TPH motor oil was detected in all samples at concentrations ranging from 48 to 170 mg/kg. Each of the LUFT metals was detected at concentrations exceeding the laboratory reporting limits.

- **North Arm Sediment:** The Contractor performed sediment sampling and analysis to pre-profile excavated sediments for offsite disposal. Based on the area of excavation identified during site characterization described in the Amendment, the Contractor collected eight sediment cores at the locations shown on Figure 30. Depth discrete sampling was performed at each location and samples were analyzed for the following constituents:

  - TPH diesel and motor oil.
  - BTEX.
  - LUFT metals, including cadmium, chromium, lead, nickel, and zinc.
  - Pesticides.

  The pre-profiling analytical results are summarized in Table 7. BTEX were not detected in any sample at concentrations equal to or greater than the laboratory reporting limit. Pesticides were detected at low concentrations in only three samples. TPH diesel was detected in all samples at concentrations ranging from 2.3 to 340 mg/kg. TPH motor oil was detected in all samples at concentrations ranging from 8.6 to 1,400 mg/kg. Each of the LUFT metals was detected at concentrations exceeding the laboratory reporting limits. All samples were analyzed by the WET, with eight samples exceeding the STLC limit for lead and none of the samples exceeded the STLC limit for cadmium, chromium, nickel, and zinc. Six samples were analyzed by the TCLP, with three samples exceeding the TCLP limit for lead.

- **MHA Import Fill:** Import soil from the TransBay Terminal Site was procured by the Trust for backfill within the Presidio. Sampling and analysis of the import soil was conducted by the Trust in October 2012. Based on the volume of import material, the Contractor collected four 4-point composite soil samples, which were analyzed for the following constituents:

  - TPH as gasoline, diesel, and motor oil.

- BTEX.
- Polyaromatic hydrocarbons (PAHs).
- Title 22 metals, including antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc.
- Pesticides.

TPH gasoline, diesel, and motor oil, BTEX, PAHs, and pesticides were not detected in any of the composite samples at concentrations equal to or greater than the laboratory reporting limit. Each of the Title 22 metals was detected at concentrations exceeding the laboratory reporting limits, but only chromium was detected at concentrations warranting solubility analysis. Prior to off hauling of the imported soil during deconstruction of the dewatering platform, the Contractor performed additional soil sampling and analysis to supplement the existing laboratory analytical results and pre-profile import fill for offsite disposal. Based on the volume of import material to be removed, the Contractor collected four 4-point composite soil samples, which were analyzed for chromium by the WET. None of the samples exceeded the STLC limit for chromium.

4.2 Disposal

The Contractor was responsible for coordinating the transportation and disposal of waste materials in accordance with the Remedial Design Documents. The Contractor submitted a Waste Disposal Plan for Trust approval, which identified the disposal/recycling facilities to which waste materials would be shipped. A summary of the weight tickets and copies of the manifests are included in Appendix Q. Non-hazardous Class II waste was transported to Ox Mountain Landfill for disposal. Non-RCRA hazardous Class I waste was transported to Buttonwillow Landfill. RCRA hazardous waste was transported to Beatty Landfill in Nevada.

- **Construction Debris:** A total of 16 truckloads of concrete and metal debris from site preparation activities totaling approximately 192 tons were transported to the Brisbane Recycling Facility between 5 and 12 February 2013. A small quantity of transite piping was encountered during site grading to prepare the staging area. Approximately 30 cubic yards of this material was transported and disposed of at Republic Services' Ox Mountain Landfill in California on 20 February 2013.

- **Grubbings, Aquatic Vegetation, and Debris:** A total of 123 truckloads of grubbed material from the access and staging areas and aquatic vegetation and debris from the lake totaling approximately 1,144 tons were transported to Recology Sunset Scavenger between 7 February and 27 June 2013, on 31 October 2013, and between 4 and 5 February 2015. A portion of the grubbings were left onsite to be used as erosion control mulch.

- **Lake Sediment Disposal:** Sediment stored in geotextile dewatering tubes remained inside of the dewatering tubes until adequately dewatered to satisfy transportation and landfill acceptance requirements. During load out operations, the bags were split open and the dewatered sediment directly loaded into transport vehicles for offsite disposal. Loading operations were conducted from within the containment of the dewatering platform.

- Non- hazardous waste comprised of dewatered sediment was transported to Republic Services' Ox Mountain Landfill in California. A total of 891 truckloads weighing a total of approximately 13,835 tons was transported between 15 July and 31 October 2013 and between 16 and 17 January 2014. A minor amount of lead shot and spent bullets were included in the disposed material.

- Non-RCRA hazardous waste comprised of dewatered sediment was transported to Clean Harbors Buttonwillow Landfill in California. A total of seven truckloads weighing a total of approximately 130 tons was transported between 1 and 22 November 2013.

- **North Arm Sediment Disposal:** Material from the North Arm excavations was mixed with lime to induce dewatering and loaded onto 10-wheel dump trucks for transfer to the Nike temporary stockpile management site within the Presidio. Stockpiled sediment was then loaded into larger trucks for transport to appropriate offsite disposal facilities.

  - Non-RCRA hazardous waste comprised of lime-amended sediment was transported to Clean Harbors Buttonwillow Landfill in California. A total of 36 truckloads weighing a total of approximately 862 tons was transported between 22 November and 3 December 2013.

  - RCRA hazardous waste comprised of lime-amended sediment was transported to US Ecology's facility in Beatty, Nevada. A total of 80 truckloads weighing a total of approximately 1,919 tons was transported between 19 December 2013 and 21 January 2014.

  - A total of 4,000 gallons of stockpile runoff water was transported as non-hazardous waste to Seaport Environmental in Redwood City, California.

- **MHA Import Fill:** Soil imported to the staging area as part of the dewatering platform construction was direct-loaded into trucks and hauled to the Ox Mountain Landfill as non-hazardous waste. A total of 253 truckloads weighing a total of approximately 4,820 tons were transported between 18 December 2013 and 5 January 2014. A portion of the import soil had been stabilized with lime amendment to facilitate compaction during construction of the dewatering platform.

Hauling occurred along a northern route from the lake using Park Avenue, as shown on Figure 5. Off haul trucks were staged within the Presidio away from residential areas and, as much as possible, within the shoulder of the roadway. All trucks were required to maintain DOT safety regulations and procedures during off hauling operations. All vehicles carrying waste were required to be securely tarped before leaving the Site. Disposal was documented with appropriate manifests, weight tickets, and bills of lading, which are included in Appendix Q.

Section 5: Post-Construction Activities

Post-construction activities include the tasks required to finalize the remedial action, restore the Site to stable conditions, and prepare the Site for restoration activities following construction. These activities include the Contractor's demobilization of construction equipment, facilities, and site controls; restoration of vegetation and installation of post-construction best management practices; and implementation of the re-vegetation program.

5.1 Bathymetric Re-Contouring

Following removal of contaminated sediments and verification sampling, the lake bottom sediments were re-contoured to smooth out the surface to eliminate dead spots for water circulation. It is anticipated that the post-remediation re-contouring will improve water quality by modifying the lake's bathymetry in a manner that allows for steep sides to reduce tule growth, a flat shelf for submerged aquatic vegetation (SAV), a relatively nutrient-poor bottom, and low sediment inputs.

Bathymetric re-contouring was conducted between 19 December 2013 and 15 January 2014 in accordance with the FS/RAP, RDIP, 401 Water Quality Certification, and 404 Nation-Wide Permit. Sediment was shifted from topographically high areas to low areas using an excavator for initial dredging of materials and the hydraulic dredge for transport and placement within the lake, thereby eliminating dead spots in lake water circulation and improving water quality.

The as-built survey for the re-contoured lake bottom is included in Appendix G and the final lake bathymetry is shown on Figure 27.

5.2 Site Stabilization and Erosion Controls

Following remedial construction at the Site, the Trust stabilized the access and staging areas to address potential site erosion and subsequent sediment migration into the lake by restoring slope contours to original conditions and de-compacting soil. Site restoration will involve re-vegetation of the disturbed upland soil slopes consistent with the VMP and in support of future re-development of the area. Stormwater BMPs were closely integrated with the site stabilization and restoration activities to address erosion control during the plant establishment period.

5.2.1 Restoration Grading

Following completion of remedial activities, grading was conducted to restore disturbed areas:

- **Staging Area:** Import fill used to construct the dewatering platform embankment was removed and transported for offsite disposal. The remaining native soils were graded to re-establish pre-construction topography, stabilize slopes, and maintain positive drainage patterns. Some adjustments to the final topography were made to accommodate the historic foundation structures discovered during earthwork activities in this area.

- **East Shore Access:** The crane mat and aggregate access road surface was removed and transported offsite for re-use. The remaining native soils were graded to re-establish pre-construction topography, stabilize slopes, and maintain positive drainage patterns.

- **North Arm Access:** The crane mat and aggregate access road surface was removed and transported offsite for re-use. The remaining native soils were graded to re-establish pre-construction topography, stabilize slopes, and maintain positive drainage patterns.

Native soil in areas to be planted was de-compacted and amended with compost in accordance with horticultural recommendations provided by the restoration biologist, HT Harvey. The as-built survey for the restored Site topography is included in Appendix G and the final Site grades are shown on Figures 31 and 32.

5.2.2 Erosion and Sediment Controls

Erosion, sediment migration, and flow control measures were installed following restoration grading in accordance with the Remedial Design Documents, the SWPPP, and field recommendations from the project hydrologist, Balance. The Trust will monitor post-construction erosion on exposed soil surfaces and graded slopes. Installation of BMPs included:

- Hydroseeding with sterile wheat.
- Native mulch.
- Straw ground cover.
- Erosion control blankets.
- Fiber rolls.
- Straw bales.
- Rock-lined velocitiy dissipation pools.
- Log weirs.

Erosion control products consisted of 100 percent biodegradable materials. Certified sterile, weed-free rice straw products were used where straw ground cover and straw bales were required. Fiber rolls and erosion control blankets consisted of coconut fibers. Plastic casings were not used. The final erosion control plan is included as Figure 33.

5.3 Re-Vegetation of Access and Staging Areas

The vegetation removed from the access and staging areas will be restored in accordance with the VMP. Planting plans have been developed with input from the Trust's Natural Resources group and include the following:

- **West Shore (Highway 1 Slope):** Caltrans has restored the pre-construction contour grades prior to replanting in this area, which is classified as West Shore Buffer in the overall Mountain Lake Enhancement Plan, with a mix of two types of coniferous trees (shore pine and bishop pine), native trees, and native shrubs.

- **East Shore Access:** The trail and amenities, including benches and fencing will be replaced. In areas where vegetation was removed for remedial construction, willow woodland areas will be replanted with native plants such as lady fern, American dogwood,

rush, wax myrtle, California blackberry, water parsley, arroyo willow, and shining willow. Oak woodland/coastal scrub areas will be replanted in drier upslope areas with native plants such as California aster, buckeye, blue blossom, beach strawberry, cow parsnip, California honeysuckle, twinberry, sticky monkey flower, oso berry, coast live oak, California polypody fern, western sword fern, western bracken fern, California coffeeberry, pink-flowering currant, California wild rose, Yerba Buena, California figwort, and hedge nettle. The Trust will re-install the wooden post and wire mesh fence and re-install the three wooden benches in this area.

- **Staging Area:** As this area is a mixture of historically developed areas and historic forest area, only forestry replanting is anticipated, which will be limited to the area of tree removals. The historic forest area will be replanted with predominantly California wax myrtle, Coast live oak, and California cherry in a band immediately adjacent to the road, with a mixture of shore pine, Monterey pine, Bishop pine, and Pacific Coast dogwood farther away from the road. This area will also be underplanted with native shrubs such as Toyon and Coffeeberrry. The Trust will install a wooden post and wire mesh fence to protect plantings in this area.
- **North Arm:** Prior to construction, this area supported dense willow riparian habitat, dominated by native arroyo willow trees, with a native wetland and non-native herbaceous understory. Willow tree root balls, root fragments, and shoot fragments are capable of re-spouting following disturbance, and perennial, native wetland plants that were common in the downstream portion of this area also naturally regenerate from below ground rhizomes (HT Harvey 2013). As a result, it is anticipated that some native willow trees and perennial wetland vegetation will re-sprout following construction and soil de-compaction. To augment this natural recovery, the North Arm will be replanted with a combination of arroyo willow and Pacific dogwood cuttings and native herbaceous wetland plantings in areas where vegetation was removed for remedial construction.

In preparation for planting, non-native soil or other materials brought onto the Site as part of access and staging area preparation have been removed, disturbed native soils decompacted, and surface soils in planting areas amended with compost in accordance with horticultural recommendations for the Presidio. Planting plans are included as Figures 34, 35, and 36.

5.4 Ongoing Restoration Monitoring

The Site erosion control measures will be maintained until the vegetation within the access and staging area limits is substantially established, as the restored vegetation will serve to minimize erosion on the slopes. Site inspections will be performed periodically, with more frequent inspections during the winter/wet season than during the summer/dry season. During the first year, the Site will be monitored one to two times per month during the winter season, prior to or following significant precipitation events, and quarterly during the summer season. In the second year, monitoring will decrease to quarterly and will be discontinued at the end of the second winter season.

5.4.1 Erosion Controls

The Trust will conduct erosion monitoring for the first year following construction, and through the restoration of the Site with native plants and historic forest species, as the Site returns to a

more natural condition. Personnel trained to evaluate the integrity of erosion control BMPs will conduct pre- and post-storm event inspections of the Site. The inspections will be performed as follows:

- Conduct a Site visit and complete a site inspection form, including weather information, summary of recommended actions, erosion and sediment controls checklist, and documentation of any observed deficiencies in the site BMPs.

- Take photographs of the Site and, if applicable, of observed deficiencies in the site BMPs. All photographs will be compiled in a photographic log, with descriptions of the photographs.

- Compile a Site inspection report and submit to the Trust following each inspection. The report will include all inspection forms and photographic logs.

The Trust will coordinate the corrective BMP measures, if necessary. The Site erosion and sediment control measures will be maintained until substantial establishment of vegetation in the planted areas of the Site.

5.4.2 Vegetation

The Trust will conduct inspections of plantings within the graded areas of the Site. Vegetative monitoring will be conducted at least once every two months during the first year of plant establishment to assess the overall effectiveness of the Site erosion control measures and health of the plantings for the first wet season. As the plant establishment improves through the summer and based on observed field conditions, monitoring frequency will be decreased to quarterly during the summer months. Field observations may require removal, modification, or maintenance of the erosion control features installed to maintain graded slopes during the plant establishment phase. The Trust will maintain a record of the inspections and any corrective actions implemented during this phase of site restoration monitoring.

Section 6: Summary, Conclusions, and Certification

Remedial construction work at Mountain Lake was conducted in general accordance with the FS/RAP, RDIP, construction drawings, and technical specifications, with the exception of design modifications in response to additional site characterization conducted in the North Arm of the lake that resulted in wetland sediment removal, which are referenced in this Report. The remedial actions were effective in removing contaminated material from Mountain Lake and restoring ecological risk to acceptable levels. As part of the site restoration activities following the remedial action, areas of the site were restored as native planting and historic forest habitat, consistent with future planned land uses.

Based on the observations made during the remedial work and results of testing as documented in this Report, the remedial actions at Mountain Lake meet the Remedial Action Objectives included in the FS/RAP and referenced in this Report.

Rick Teczon, P.E.
Design Engineer of Record

3-24-14

REGISTERED PROFESSIONAL ENGINEER
RICKY TECZON JR.
No. C 61765
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

References

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Tables

Table 1: Project Chronology

Activity	Begin	End
Pre-Remediation Activities		
Staging and Access Area Tree Removal	08/09/12	10/11/12
Stone Column Installation by Caltrans	08/16/12	10/19/12
Treatability Study	09/25/12	01/18/13
Permits (Dig, Power, Construction, Lift)	12/04/12	01/22/13
Phase 1 Activities		
Phase 1 Mobilization	01/07/13	01/11/13
Staging and Access Area Clearing and Grubbing	01/19/13	02/12/13
East Shore Access Ramp	01/19/13	02/26/13
Staging Area Concrete Demolition	01/28/13	02/05/13
Aquatic Vegitation and Debris Removal	01/30/13	02/22/13
Staging Area Grading and Compaction	01/30/13	04/15/13
Dewatering Platform Soil Stabilization	04/09/13	04/10/13
Dewatering Platform Liner Installation	04/16/13	04/18/13
Dewatering Platform Concrete Slab Installation	04/22/13	04/24/13
Phase 2 Activities		
Phase 2 Mobilization	04/09/13	05/13/13
Pre-Confirmation Sampling and Analysis	04/19/13	04/25/13
Water Treatment System Installation	04/26/13	05/13/13
Baseline Hydrographic Survey	05/08/13	05/10/13
Sediment Conditioning System Installation	05/09/13	05/13/13
Effluent Sampling and Analysis	05/14/13	09/23/13
Batch 1, Layer 1 Dredging and Dewatering	05/14/13	05/31/13
Batch 1, Layer 2 Dredging and Dewatering	06/03/13	06/24/13
Batch 1, Layer 3 Dredging and Dewatering	06/25/13	07/01/13
Batch 1 Consolidation Period	07/02/13	07/12/13
Batch 1 Off Haul	07/15/13	08/02/13
Batch 2, Layer 1 Dredging and Dewatering	08/13/13	09/06/13
Batch 2, Layer 2 Dredging and Dewatering	09/13/13	09/26/13
Rip Rap Installation	09/13/13	09/27/13
Batch 2 Consolidation Period	09/30/13	10/11/13
Batch 2 Off Haul	10/14/13	10/31/13
Verification Sampling and Analysis	10/17/13	10/21/13
Dewatering Platform Removal and Regrading	11/05/13	01/22/14
Perimeter Benching Operations	12/19/13	01/15/14
Marine Equipment Demobilzation	01/15/14	01/22/14
North Arm Activities		
Mobilization	09/30/13	10/04/13
Clearing, Grubbing, and Access	10/04/13	10/14/13
Cofferdam Installation	10/16/13	11/08/13
Northern Cofferdam Dewatering and Excavation	11/13/13	11/18/13
Back Fill Northern Excavation	11/19/13	11/21/13
Southern Cofferdam Dewatering and Excavation	12/02/13	12/04/13
Back Fill Southern Excavation	12/04/13	12/09/13
Off Haul	11/22/13	01/21/14
Demobilzation and Site Stabilization	12/11/13	01/31/14

Table 2: Summary of Regulatory Agency Correspondence

Date	Title	Submitted To	Submitted By
04/02/12	UCL Methods in the Remedial Investigation and Feasibility Study for Mountain Lake	Remedios Sunga California Environmental Protection Agency Department of Toxic Substances Control 700 Heinz Avenue, Berkeley, CA 94710-2721	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052
04/18/12	Regulatory Meeting Meeting Agenda, Detailed Discussion, Notes, Schedule - Project Kickoff	via eletronic transmittal to: Denise Tsuji (DTSC) Lori Koch (DTSC) Remedios Sunga (DTSC) Agnes Farres (RWQCB)	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052
05/17/12	Final Feasibility Study/Remedial Action Plan, Mountain Lake, Presidio of San Francisco	Remedios Sunga California Environmental Protection Agency Department of Toxic Substances Control 700 Heinz Avenue, Berkeley, CA 94710-2721	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052
07/24/12	Regulatory Meeting Meeting Agenda and Notes - Treatability study plan discussed	via eletronic transmittal to: Lori Koch (DTSC) Agnes Farres (RWQCB)	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052

Table 2: Summary of Regulatory Agency Correspondence

Date	Title	Submitted To	Submitted By
09/19/12	Regulatory Meeting Meeting Agenda, Notes, Figures - Treatability Study Update - In-Lake BMPs	via eletronic transmittal to: Lori Koch (DTSC) Agnes Farres (RWQCB)	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052
10/24/12	Regulatory Meeting Meeting Agenda, Notes, Report, Figures - Elutriate Monitoring Requirements - Confirmation Sampling Requirements - Sample Grid Spacing - No Sampling in Rip Rap Area - No Additional Dredging in Rip Rap Area	via eletronic transmittal to: Lori Koch (DTSC) Agnes Farres (RWQCB)	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052
11/28/12	Regulatory Meeting Meeting Agenda and Notes - Elutriate Toxicity Test Results - Discharge Laboratory Analyses to Include TSS, TPH, Lead, Zinc	via eletronic transmittal to: Lori Koch (DTSC) Agnes Farres (RWQCB)	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052
02/27/13	Remedial Design Implementation Plan, Mountain Lake, Presidio of San Francisco Including: Samplng and Analysis Plan; Best Management Practices Plan; Perimeter Air Monitoring Plan	Lori Koch California Environmental Protection Agency Department of Toxic Substances Control 700 Heinz Avenue, Berkeley, CA 94710-2721	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052

Table 2: Summary of Regulatory Agency Correspondence

Date	Title	Submitted To	Submitted By
05/13/13	Regulatory Meeting Meeting Agenda and Notes - Pre-Confirmation Sampling Results - Chromatographic Analysis - Additional Dredging (DMU-5)	via eletronic transmittal to: Lori Koch (DTSC) Agnes Farres (RWQCB)	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052
07/30/13	Summary of Sediment Dewatering Filtrate Treatment Effluent Monitoring Results, Mountain Lake Remediation Project, The Presidio of San Francisco	via eletronic transmittal to: Lori Koch California Environmental Protection Agency Department of Toxic Substances Control 700 Heinz Avenue, Berkeley, CA 94710-2721	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052
08/19/13	Pre-Confirmation Sediment Sampling and Analysis Report, Mountain Lake Remediation Project, The Presidio of San Francisco	via eletronic transmittal to: Lori Koch California Environmental Protection Agency Department of Toxic Substances Control 700 Heinz Avenue, Berkeley, CA 94710-2721	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052
09/24/13	Mountain Lake North Arm Amendment to the Remedial Design Implementation Plan, Mountain Lake, Presidio of San Francisco	via eletronic transmittal to: Lori Koch California Environmental Protection Agency Department of Toxic Substances Control 700 Heinz Avenue, Berkeley, CA 94710-2721	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052

Table 2: Summary of Regulatory Agency Correspondence

Date	Title	Submitted To	Submitted By
10/02/13	Summary of Air Monitoring Results, Mountain Lake Remediation Project, The Presidio of San Francisco	via eletronic transmittal to: Lori Koch California Environmental Protection Agency Department of Toxic Substances Control 700 Heinz Avenue, Berkeley, CA 94710-2721	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052
10/16/13	Regulatory Meeting Meeting Agenda and Notes - Verification Sampling Begins 10/17/13 - Lead Analysis Only	via eletronic transmittal to: Lori Koch (DTSC) Agnes Farres (RWQCB)	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052
11/04/13	Mountain Lake Summary of Pre- and Post-Construction Turbidity Monitoring Results, Mountain Lake Remediation Project, The Presidio of San Francisco	via eletronic transmittal to: Lori Koch California Environmental Protection Agency Department of Toxic Substances Control 700 Heinz Avenue, Berkeley, CA 94710-2721	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052
12/16/13	Post-Dredging Verification Sediment Sampling and Analysis Report, Mountain Lake Remediation Project, The Presidio of San Francisco	via eletronic transmittal to: Lori Koch California Environmental Protection Agency Department of Toxic Substances Control 700 Heinz Avenue, Berkeley, CA 94710-2721	Genevieve Coyle Environmental Remediation Project Manager, The Presidio Trust 34 Graham Street P.O. Box 29052 San Francisco, CA 94126-0052

Table 3: Pre-Confirmation Sediment Sample Analytical Results

Sample Location	Northing[b]	Easting[b]	Sample Name	Sample Date	Sample Depth (feet below dredge limits)	ASTM D2216	EPA 6020					EPA 8015[a]		
						Moisture (percent)	Antimony (mg/kg)[c]	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Zinc (mg/kg)	Motor Oil Range Organics [C24-C36] (mg/kg)	UCM[d] Population	Over-Dredge?
MLEX201	5,992,100	2,115,280	MLEX201(0.5)	04/24/13	0.5	84	---[e]	---	---	23	---	**690**	A	No
MLEX202	5,992,029	2,115,281	MLEX202(0.5)	04/24/13	0.5	89	---	---	---	3.0	---	**460**	A	No
MLEX203	5,991,959	2,115,274	MLEX203(0.5)	04/24/13	0.5	88	<2.0[f]	<2.0	18	3.5	**360**	**390**	A	No
MLEX204	5,992,554	2,115,329	MLEX204(0.5)	04/24/13	0.5	26	<0.31	-	---	49	---	63	B	No
MLEX205	5,992,484	2,115,322	MLEX205(0.5)	04/24/13	0.5	15	---	<0.29	---	2.1	---	<5.9	A	No
MLEX206	5,992,403	2,115,320	MLEX206(0.5)	04/23/13	0.5	80	<1.2	<1.2	15	2.5	54	**210**	A	No
MLEX207	5,992,316	2,115,317	MLEX207(0.5)	04/23/13	0.5	85	---	---	---	3.4	---	**840**	A	No
			DUP042313-1	04/23/13	0.5	84	---	---	---	19	---	**410**	A	No
MLEX208	5,992,230	2,115,320	MLEX208(0.5)	04/23/13	0.5	84	---	<1.4	---	6.1	---	**1,100**	A	No
			MLEX208(1)	04/23/13	1	85	---	---	---	---	---	**210**	A	No
			MLEX208(2)	04/23/13	2	84	---	---	---	---	---	**350**	A	No
MLEX209	5,992,150	2,115,320	MLEX209(0.5)	04/23/13	0.5	83	---	---	---	14	---	**1,100**	A	No
			MLEX209(1)	04/23/13	1	88	---	---	---	---	---	**970**	A	No
			MLEX209(2)	04/23/13	2	84	---	---	---	---	---	**510**	A	No
MLEX210	5,992,060	2,115,319	MLEX210(0.5)	04/23/13	0.5	76	---	---	---	23	---	**280**	A	No
MLEX211	5,991,980	2,115,321	MLEX211(0.5)	04/23/13	0.5	85	---	---	---	2.5	---	**180**	A	No
MLEX212	5,991,891	2,115,319	MLEX212(0.5)	04/24/13	0.5	23	---	<0.31	---	76	---	**390**	B	No
			MLEX212(1)	04/24/13	1	25	---	---	---	---	---	**190**	B	No
			MLEX212(2)	04/24/13	2	18	---	---	---	---	---	24	A	No
MLEX213	5,992,312	2,115,365	MLEX213(0.5)	04/24/13	0.5	66	---	<0.67	---	34	---	**230**	A	No
MLEX214	5,992,232	2,115,370	MLEX214(0.5)	04/23/13	0.5	74	---	---	---	**110**	---	**490**	B	**Yes**
			MLEX214(1)	04/23/13	1	61	---	---	---	34	---	**220**[g]	A	No
			MLEX214(2)	04/23/13	2	87	---	---	---	<1.9	---	**480**[g]	A	No
MLEX215	5,992,148	2,115,362	MLEX215(0.5)	04/24/13	0.5	63	<0.63	<0.63	24	30	70	120	A	No
MLEX216	5,992,073	2,115,366	MLEX216(0.5)	04/24/13	0.5	86	<1.6	<1.6	20	1.6	110	**320**	A	No
MLEX217	5,991,992	2,115,366	MLEX217(0.5)	04/24/13	0.5	90	---	---	---	<2.5	---	**1,000**	A	No
MLEX218	5,992,272	2,115,422	MLEX218(0.5)	04/23/13	0.5	19	<0.28	---	---	3.9	---	38	A	No
MLEX219	5,992,196	2,115,426	MLEX219(0.5)	04/23/13	0.5	73	---	---	---	**240**	---	**2,200**	B	**Yes**
			MLEX219(1)	04/23/13	1	72	---	---	---	**160**	---	**1,300**	B	**Yes**
			MLEX219(2)	04/23/13	2	74	---	---	---	**120**	---	**300**	B	**Yes**
MLEX220	5,992,108	2,115,420	MLEX220(0.5)	04/24/13	0.5	76	---	---	---	**150**	---	**1,200**	B	**Yes**
			MLEX220(1)	04/24/13	1	61	---	---	---	38	---	**3,400**	B	**Yes**
			MLEX220(2)	04/24/13	2	74	---	---	---	**110**	---	**540**	B	**Yes**

Table 3: Pre-Confirmation Sediment Sample Analytical Results

Sample Location	Northing[b]	Easting[b]	Sample Name	Sample Date	Sample Depth (feet below dredge limits)	ASTM D2216	EPA 6020					EPA 8015[a]		
						Moisture (percent)	Antimony (mg/kg)[c]	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Zinc (mg/kg)	Motor Oil Range Organics [C24-C36] (mg/kg)	UCM[d] Population	Over-Dredge?
MLEX221	5,992,023	2,115,422	MLEX221(0.5)	04/24/13	0.5	76	---	---	---	53	---	**280**	A	No
			DUP042413-1	04/24/13	0.5	76	---	---	---	45	---	**230**	A	No
MLEX222	5,991,939	2,115,422	MLEX222(0.5)	04/24/13	0.5	17	<0.28	<0.28	7.3	5.5	28	28	B	No
MLEX223	5,992,162	2,115,468	MLEX223(0.5)	04/23/13	0.5	74	---	---	---	**300**	---	**2,300**	B	**Yes**
			MLEX223(1)	04/23/13	1	71	---	---	---	**120**	---	**1,100**	B	**Yes**
			MLEX223(2)	04/23/13	2	69	---	---	---	63	---	**420**	B	No
MLEX224	5,992,100	2,115,466	MLEX224(0.5)	04/24/13	0.5	69	---	---	---	61	---	**310**	A	No
MLEX225	5,992,031	2,115,463	MLEX225(0.5)	04/24/13	0.5	72	---	---	---	66	---	**190**	A	No
MLEX226	5,992,161	2,115,507	MLEX226(0.5)	04/22/13	0.5	79	---	---	---	**930**	---	**3,300**	B	**Yes**
			MLEX226(1)	04/22/13	1	77	---	---	---	**600**	---	**1,600**	B	**Yes**
			MLEX226(2)	04/22/13	2	72	---	---	---	**120**	---	**520**	B	**Yes**
MLEX227	5,992,092	2,115,506	MLEX227(0.5)	04/22/13	0.5	78	<1.1	<1.1	27	10	82	**860**	A	No
			MLEX227(1)	04/22/13	1	86	---	---	---	---	---	**590**	A	No
			MLEX227(2)	04/22/13	2	88	---	---	---	---	---	**1,300**	A	No
MLEX228	5,992,035	2,115,513	MLEX228(0.5)	04/25/13	0.5	71	---	---	---	6.0	---	<170	A	No
MLEX229	5,992,208	2,115,574	MLEX229(0.5)	04/19/13	0.5	23	---	---	---	3.1	---	<6.5	A	No
MLEX230	5,992,156	2,115,578	MLEX230(0.5)	04/22/13	0.5	82	<1.3	<1.3	28	22	87	**590**	A	No
			MLEX230(1)	04/22/13	1	82	---	---	---	---	---	**540**	A	No
			MLEX230(2)	04/22/13	2	77	---	---	---	---	---	**240**	A	No
MLEX231	5,992,087	2,115,576	MLEX231(0.5)	04/24/13	0.5	85	<1.7	<1.7	22	2.1	**340**	**160**	A	No
MLEX232	5,992,034	2,115,575	MLEX232(0.5)	04/25/13	0.5	16	<0.28	<0.28	5.6	14	78	100	B	No
MLEX233	5,992,178	2,115,640	MLEX233(0.5)	04/25/13	0.5	84	---	---	---	1.7	---	**790**	A	No
MLEX234	5,992,123	2,115,639	MLEX234(0.5)	04/25/13	0.5	88	---	---	---	<2.1	---	**460**	A	No
			DUP042513	04/25/13	0.5	87	---	---	---	<1.9	---	**390**	A	No
MLEX235	5,992,177	2,115,716	MLEX235(0.5)	04/25/13	0.5	67	---	<0.70	---	62	---	**420**	A	No
Freshwater Sediment Cleanup Level[h]					Serpentinite	---	3.0	1.9	114	82	230	144	---	---
					Colma	---	3.0	1.1	114	82	230	144	---	---

Notes:

(a) Samples prepared using EPA Method 3630 - silica gel cleanup step.
(b) Sample locations provided by Dixon Marine Services.
(c) mg/kg = milligrams per kilogram.
(d) "UCM" denotes unresolved complex mixture which is indicative of anthropogenic sources of petroleum compounds. Population A samples do not exhibit an UCM, indicating that the results characterize vasculate plant material. Population B samples exhibit an UCM, indicating the presence of anthropogenic petroleum compounds.
(e) "---" denotes not analyzed.
(f) < = Not detected above reporting limit. Bold, red font indicates concentration exceeds cleanup level.
(g) Sample analyzed beyond hold time.
(h) Cleanup levels are based upon ecological freshwater sediment criteria and background metals concentrations for the Colma and Serpentine formations. Source is Table 3-1 from Final Feasibility Study/Remedial Action Plan, Mountain Lake, Presidio of San Francisco, California 17 May 2012 (Kennedy/Jenks 2012). Colma and Serpentine formations are considered likely, based upon previous sediment sampling, to be encountered during sediment remediation of Mountain Lake. Other soil types, such as greenstone, are also expected to be encountered during remediation.

Table 4: Summary of Verification Sample Analytical Results

Sample Location	Northing[(a)] (feet)	Easting[(a)] (feet)	Sample Name	Sample Date	Sample Depth (feet)[(b)]	ASTM D2216 Moisture (percent)	EPA 6020 Lead (mg/kg)[(c)]
MLEX236	2,115,238	5,992,064	MLEX236(0.25)	10/21/13	0.25	61.0	34
MLEX237	2,115,324	5,991,890	MLEX237(0.25)	10/21/13	0.25	73.6	**140**
MLEX238	2,115,323	5,991,964	MLEX238(0.25)	10/21/13	0.25	16.9	**130**
MLEX239	2,115,323	5,992,064	MLEX239(0.25)	10/21/13	0.25	24.5	**89**
MLEX240	2,115,323	5,992,165	MLEX240(0.25)	10/21/13	0.25	17.2	75
MLEX241	2,115,323	5,992,265	MLEX241(0.25)	10/21/13	0.25	24.4	15
MLEX242	2,115,318	5,992,365	MLEX242(0.25)	10/18/13	0.25	53.9	19
MLEX243	2,115,325	5,992,466	MLEX243(0.25)	10/18/13	0.25	55.3	14
MLEX244	2,115,325	5,992,554	MLEX244(0.25)	10/18/13	0.25	66.8	54
			DUP-101813-1	10/18/13	0.25	75.0	42
MLEX245	2,115,396	5,992,325	MLEX245(0.25)	10/18/13	0.25	61.3	52
MLEX246	2,115,421	5,991,964	MLEX246(0.25)	10/21/13	0.25	22.8	21
MLEX247	2,115,422	5,992,067	MLEX247(0.25)	10/18/13	0.25	23.6	**140**
MLEX248	2,115,425	5,992,167	MLEX248(0.25)	10/18/13	0.25	27.8	**84**
MLEX249	2,115,423	5,992,269	MLEX249(0.25)	10/18/13	0.25	80.8	5.9
MLEX250	2,115,509	5,991,977	MLEX250(0.25)	10/21/13	0.25	70.8	12
			DUP-102113-1	10/21/13	0.25	81.0	11
MLEX251	2,115,526	5,992,062	MLEX251(0.25)	10/17/13	0.25	30.6	**330**
MLEX252	2,115,521	5,992,166	MLEX252(0.25)	10/17/13	0.25	28.0	75
MLEX253	2,115,624	5,992,071	MLEX253(0.25)	10/17/13	0.25	19.2	35
MLEX254	2,115,626	5,992,162	MLEX254(0.25)	10/17/13	0.25	18.4	28
MLEX255	2,115,726	5,992,166	MLEX255(0.25)	10/17/13	0.25	39.8	**240**
			Freshwater Sediment Cleanup Level[(d)]		Serpentinite	---	82
					Colma	---	82

Notes:

(a) Sample locations provided by Dixon Marine Services. Samples composited from three subsamples to provide sufficient sample volume from upper 3 inches of sediment surface. Northing and Eastings presented for centroid of area delineated by subsampels.

(b) Sample depth measured in feet below top of sediment.

(c) mg/kg = milligrams per kilogram.

(d) Cleanup levels are based upon ecological freshwater sediment criteria and background metals concentrations for the Colma and Serpentine formations. Source is Table 3-1 from Final Feasibility Study/Remedial Action Plan, Mountain Lake, Presidio of San Francisco, California 17 May 2012 (Kennedy/Jenks 2012). Colma and Serpentine formations are considered likely, based upon previous sediment sampling, to be encountered during sediment remediation of Mountain Lake. Other soil types, such as greenstone, are also expected to be encountered during remediation.

Table 5: Summary of Turbidity Monitoring Results

STARTUP TURBIDITY[a]

Date	Time	NTU[b]
05/16/13	11:30 AM	8.2
05/16/13	12:00 PM	6.5
05/16/13	12:15 PM	5
05/16/13	12:45 PM	5.3
05/16/13	1:00 PM	6.8
05/16/13	1:15 PM	4.9
05/16/13	1:30 PM	5.7
05/16/13	1:45 PM	7.1
05/16/13	2:00 PM	63.4
05/16/13	2:15 PM	23.7
05/16/13	2:30 PM	12.9
05/16/13	2:45 PM	9
05/16/13	3:00 PM	20.1
05/16/13	3:15 PM	20
05/16/13	3:30 PM	13.4
05/16/13	3:45 PM	8.2
05/16/13	4:00 PM	11.2
05/16/13	4:15 PM	44.3
05/16/13	4:30 PM	12.3
05/17/13	9:45 AM	7.2
05/17/13	10:00 AM	8.3
05/17/13	10:15 AM	14.9
05/17/13	10:30 AM	23.2
05/17/13	10:45 AM	42.5
05/17/13	11:00 AM	26.7
05/17/13	11:15 AM	15.5
05/17/13	11:30 AM	12.3
05/17/13	11:45 AM	15.4
05/17/13	12:30 PM	15.5
05/17/13	12:45 PM	14.7
05/17/13	1:00 PM	12.3
05/17/13	1:15 PM	17
05/17/13	1:30 PM	17.5
05/17/13	1:45 PM	11.3
05/17/13	2:00 PM	15.2
05/17/13	2:15 PM	13.2
05/17/13	2:30 PM	14.3
05/17/13	2:45 PM	11.6
05/17/13	3:00 PM	34
05/17/13	3:15 PM	17
05/17/13	3:30 PM	18.9
05/17/13	3:45 PM	8.6
05/17/13	4:00 PM	8.5
05/18/13	9:30 AM	35.0
05/18/13	9:45 AM	9.7
05/18/13	10:00 AM	11.7
05/18/13	10:15 AM	14.1
05/18/13	10:30 AM	9.8
05/18/13	10:45 AM	26.3
05/18/13	11:00 AM	8.5
05/18/13	11:15 AM	16.3
05/18/13	11:30 AM	17.5
05/18/13	11:45 AM	16.3
05/18/13	1:15 PM	19.8
05/18/13	1:30 PM	18.2
05/18/13	1:45 PM	69.8
05/18/13	2:00 PM	79.7
05/18/13	2:15 PM	33.5
05/18/13	2:30 PM	71.7
05/18/13	2:45 PM	92.1
05/18/13	3:15 PM	39.9
05/18/13	3:30 PM	29.9
05/18/13	3:45 PM	25.9
05/18/13	4:00 PM	23.2
05/18/13	4:15 PM	30.7
05/18/13	4:30 PM	93.0
05/20/13	9:15 AM	63.9
05/20/13	9:30 AM	30.4
05/20/13	9:45 AM	57.2
05/20/13	10:00 AM	45.7
05/20/13	11:00 AM	25.2
05/20/13	11:15 AM	36.2
05/20/13	11:30 AM	16.5
05/20/13	11:45 AM	38.4
05/20/13	12:00 PM	35.2
05/20/13	12:15 PM	39.7
05/20/13	5:15 PM	28.3
05/20/13	5:30 PM	106.0
05/20/13	5:45 PM	26.8
05/20/13	6:00 PM	74.2
05/20/13	6:15 PM	39.9
05/21/13	11:00 AM	18.0
05/21/13	11:15 AM	24.5
05/21/13	11:30 AM	28.8
05/21/13	11:45 AM	19.9
05/21/13	12:00 PM	19.8
05/21/13	12:15 PM	24.3
05/21/13	12:30 PM	24.2
05/21/13	12:45 PM	21.7
05/21/13	1:00 PM	24.1
05/21/13	1:15 PM	31.0
05/21/13	1:30 PM	37.3
05/21/13	1:45 PM	24.8
05/21/13	2:00 PM	15.9
05/21/13	2:15 PM	15.5
05/21/13	2:30 PM	16.3
05/21/13	2:45 PM	39.2
05/21/13	3:30 PM	29.2
05/21/13	4:00 PM	28.5
05/21/13	4:15 PM	33.1
05/21/13	4:30 PM	24.8
05/21/13	4:45 PM	35.0
05/21/13	5:00 PM	22.6
05/21/13	5:20 PM	48.3
05/21/13	5:50 PM	30.8
05/21/13	6:00 PM	22.3
05/21/13	6:15 PM	28.0
05/21/13	6:25 PM	20.7
05/22/13	10:00 AM	25.3
05/22/13	10:15 AM	26.3
05/22/13	10:30 AM	25.3
05/22/13	10:45 AM	16.2
05/22/13	11:00 AM	31.6
05/22/13	11:15 AM	21.3
05/22/13	11:30 AM	20.9
05/22/13	11:45 AM	25.3
05/22/13	2:20 PM	69.2
05/22/13	2:30 PM	19.6
05/22/13	2:45 PM	18.3
05/22/13	3:00 PM	60.7
05/22/13	3:15 PM	32.5
05/22/13	4:30 PM	27.5
05/22/13	4:45 PM	30.6
05/22/13	5:00 PM	29.3
05/22/13	5:15 PM	33.4
05/22/13	5:30 PM	43.6
05/22/13	5:45 PM	29.1
05/22/13	6:00 PM	48.4
05/23/13	9:30 AM	46.7

Table 5: Summary of Turbidity Monitoring Results

STARTUP TURBIDITY

Date	Time	NTU
05/23/13	9:45 AM	23.1
05/23/13	10:00 AM	47.7
05/23/13	10:15 AM	34.1
05/23/13	10:30 AM	29.9
05/23/13	10:45 AM	24.8
05/23/13	11:00 AM	24.3
05/23/13	11:15 AM	17.9
05/23/13	11:30 AM	18.4
05/23/13	3:30 PM	51.0
05/23/13	4:00 PM	43.9
05/23/13	4:15 PM	36.8
05/23/13	4:30 PM	23.2
05/23/13	4:45 PM	41.9
05/23/13	5:00 PM	27.6
05/23/13	5:15 PM	26.9
05/24/13	10:00 AM	55.5
05/24/13	10:15 AM	31.3
05/24/13	10:30 AM	23.5
05/24/13	10:45 AM	22.8
05/24/13	11:00 AM	42
05/24/13	11:15 AM	54.1
05/24/13	11:30 AM	53.1
05/24/13	11:45 AM	58.4
05/24/13	12:00 PM	59.2
05/24/13	12:15 PM	55.4
05/24/13	12:30 PM	52.9
05/24/13	12:45 PM	69.6
05/24/13	1:00 PM	102
05/24/13	1:15 PM	53.3
05/24/13	1:30 PM	50.3
05/24/13	1:45 PM	81.8
05/24/13	2:00 PM	47.1
05/24/13	2:40 PM	74.9
05/24/13	3:00 PM	61
05/24/13	3:15 PM	32.4
05/24/13	3:30 PM	64.2
05/24/13	3:45 PM	84.3
05/24/13	4:00 PM	123
05/24/13	4:15 PM	98.4
05/24/13	4:45 PM	51.7
05/24/13	5:00 PM	65.6
05/24/13	5:15 PM	42.2
05/24/13	5:30 PM	41.7
05/24/13	5:45 PM	45.6
05/24/13	6:00 PM	95.2

Date	Time	NTU
05/28/13	9:30 AM	44.9
05/28/13	9:50 AM	10.4
05/28/13	10:00 AM	13.2
05/28/13	10:15 AM	15.3
05/28/13	10:30 AM	12.3
05/28/13	10:45 AM	18.4
05/28/13	11:00 AM	21.7
05/28/13	3:54 PM	81.3
05/28/13	4:00 PM	50.9
05/28/13	4:15 PM	42.7
05/28/13	4:30 PM	42.7
05/28/13	4:45 PM	31.0
05/28/13	5:00 PM	19.5
05/28/13	5:15 PM	17.8
05/28/13	5:30 PM	36.3
05/28/13	5:45 PM	30.6
05/28/13	6:00 PM	23.4
05/28/13	6:15 PM	78.0
05/29/13	11:15 AM	31.6
05/29/13	11:30 AM	46.7
05/29/13	11:45 AM	31.8
05/29/13	12:00 PM	29.3
05/29/13	12:15 PM	26.9
05/29/13	12:30 PM	22.2
05/29/13	12:45 PM	25.5
05/29/13	1:00 PM	21.4
05/29/13	1:15 PM	17.4
05/29/13	1:30 PM	19.9
05/29/13	2:15 PM	34.6
05/29/13	2:30 PM	35.2
05/29/13	2:45 PM	26.5
05/29/13	3:00 PM	22.8
05/29/13	3:15 PM	45.5
05/29/13	3:30 PM	27.3
05/29/13	3:45 PM	23.2
05/29/13	4:00 PM	48.1
05/29/13	4:15 PM	22.2
05/29/13	4:30 PM	128.0
05/29/13	4:45 PM	33.1
05/29/13	5:00 PM	51.1
05/29/13	5:15 PM	22.3

Date	Time	NTU
05/30/13	9:15 AM	25.5
05/30/13	9:30 AM	23.0
05/30/13	9:45 AM	18.8
05/30/13	10:00 AM	21.4
05/30/13	10:15 AM	22.5
05/30/13	10:30 AM	25.8
05/30/13	10:45 AM	26.0
05/30/13	11:00 AM	20.0
05/30/13	11:15 AM	27.9
05/30/13	11:30 AM	35.2
05/30/13	11:45 AM	37.1
05/30/13	12:00 PM	33.4
05/30/13	1:00 PM	23.5
05/30/13	1:15 PM	24.1
05/30/13	1:30 PM	29.6
05/30/13	1:40 PM	15.8
05/30/13	3:00 PM	35.3
05/30/13	3:15 PM	33.1
05/30/13	3:30 PM	36.5
05/30/13	3:45 PM	33.8
05/30/13	4:00 PM	32.4
05/30/13	4:15 PM	31.4
05/30/13	4:30 PM	35.3
05/30/13	4:45 PM	29.6
05/30/13	5:00 PM	35.3
05/30/13	5:15 PM	29.3
05/30/13	5:30 PM	24.4
05/30/13	5:45 PM	24.7
05/30/13	6:00 PM	28.4
05/30/13	6:15 PM	25.5
05/31/13	9:00 AM	24.3
05/31/13	9:15 AM	23.8
05/31/13	9:30 AM	34.9
05/31/13	9:45 AM	23.7
05/31/13	10:00 AM	21.5
05/31/13	10:15 AM	18.7
05/31/13	10:30 AM	18.2
05/31/13	10:45 AM	19.4
05/31/13	2:45 PM	63.3
05/31/13	3:00 PM	72.0
05/31/13	3:15 PM	68.1
05/31/13	3:30 PM	90.3
05/31/13	3:45 PM	32.2
05/31/13	4:00 PM	62.5
05/31/13	4:15 PM	42.5
05/31/13	4:30 PM	45.5
05/31/13	4:45 PM	43.8
05/31/13	5:00 PM	41.4
05/31/13	5:15 PM	66.6
05/31/13	5:30 PM	39.6

Table 5: Summary of Turbidity Monitoring Results

STARTUP TURBIDITY

Date	Time	NTU
06/03/13	9:00 AM	45
06/03/13	10:00 AM	15.1
06/03/13	11:30 AM	18.2
06/03/13	11:45 AM	28.5
06/03/13	12:00 PM	13.6
06/03/13	12:15 PM	17
06/03/13	12:30 PM	25.3
06/03/13	12:45 PM	11.2
06/03/13	1:00 PM	12
06/03/13	1:30 PM	20.7
06/03/13	1:45 PM	15.8
06/03/13	2:00 PM	17.9
06/03/13	2:45 PM	20.3
06/03/13	3:00 PM	14.3
06/03/13	3:15 PM	17.1
06/03/13	3:30 PM	15.4
06/03/13	3:45 PM	16.2
06/03/13	4:00 PM	16.7
06/03/13	4:15 PM	19.4
06/03/13	4:30 PM	22
06/03/13	4:45 PM	18.8
06/03/13	5:00 PM	22.3
06/03/13	5:15 PM	27.4
06/03/13	5:30 PM	25.2
06/04/13	8:52 AM	43.3
06/04/13	9:15 AM	21.4
06/04/13	9:30 AM	26
06/04/13	9:52 AM	22
06/04/13	10:00 AM	21.2
06/04/13	10:15 AM	22.2
06/04/13	10:30 AM	30.4
06/04/13	10:45 AM	31.2
06/04/13	11:00 AM	29
06/04/13	11:15 AM	32.7
06/04/13	11:30 AM	25.2
06/04/13	12:00 PM	26.2
06/04/13	12:15 PM	30.9

POST-CONSTRUCTION TURBIDITY

Date	Time	NTU
10/01/13	5	19.0
10/01/13	8	24.5
10/01/13	12	27.5
10/02/13	3	19.6
10/02/13	6	24.6
10/02/13	12	26.1
10/03/13	3	11.3
10/03/13	6	16.2
10/03/13	12	21.7
10/04/13	3	13.7
10/04/13	5	18.7
10/04/13	8	22.3
10/07/13	3	13.3
10/07/13	5	16.0
10/07/13	8	17.8
10/08/13	4	18.1
10/08/13	9	23.5
10/08/13	-	-
10/09/13	3	12.3
10/09/13	5	15.1
10/09/13	8	21.7
10/10/13	3	11.6
10/10/13	5	14.1
10/10/13	8	20.9
10/11/13[(d)]	2	7.2
10/11/13	3	7.6
10/11/13	4	7.7
10/11/13	5	8.0
10/11/13	6	8.4
10/14/13[(d)]	3	4.8
10/14/13	4	5.2
10/14/13	5	5.3
10/14/13	6	5.6
10/15/13	3	14.3
10/15/13	5	15.4
10/15/13	9	21.2

Notes:

(a) Turbidity measurements shown were taken by Dixon Marine Services at the stern of the dredge during production at a depth of 6 feet.
(b) NTU = Nephelometric Turbidity Units.
(c) Measurements made in center of Mountain Lake.
(d) Due to equipment limitations readings were taken from barge 25 feet east of shore ramp.

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
05/14/13	3:40:00PM	28	1.98	1	<2[c]
05/14/13	4:40:00PM	28	1.41	2	<2
05/14/13	5:40:00PM	48	1.90	3	2
05/14/13	6:45:00PM	37	1.45	4	<2
05/14/13	9:20:00PM	20	1.50	5	<2
05/15/13	9:00:00AM	35	1.30	6	<2
05/15/13	10:00:00AM	47	2.15	7	<2
05/15/13	11:00:00AM	45	0.99	8	<2
05/15/13	12:05:00PM	55	1.07	9	<2
05/15/13	1:05:00PM	25	0.64	10	<2
05/15/13	2:00:00PM	40	0.50	11	<2
05/15/13	3:07:00PM	32	0.36	12	<2
05/15/13	4:05:00PM	36	0.40	13	<2
05/15/13	5:00:00PM	50	1.23	14	<2
05/15/13	6:05:00PM	35	0.62	15	<2
05/15/13	7:00:00PM	-	-	16	<2
05/15/13	8:46:00PM	42	1.07	17	<2
05/15/13	11:10:00PM	40	1.28	18	<2
05/16/13	1:20:00AM	40	1.70	19	<2
05/16/13	3:35:00AM	38	1.63	20	<2
05/16/13	9:30:00AM	78	2.22	19	<2
05/16/13	11:05:00AM	83	2.94	20	<2
05/16/13	12:02:00PM	129	3.07	21	<2
05/16/13	1:06:00PM	133	1.29	22	<2
05/16/13	2:05:00PM	146	1.08	23,24	<2
05/16/13	3:02:00PM	159	0.74	25	<2
05/16/13	4:04:00PM	112	0.37	26	<2
05/16/13	5:00:00PM	113	0.41	27	<2
05/16/13	8:50:00PM	67	3.37	28	<2
05/16/13	11:45:00PM	58	4.74	29	<2
05/17/13	2:30:00AM	51	3.27	30	<2
05/17/13	5:25:00AM	48	5.37	31	<2
05/17/13	8:20:00AM	55	1.47	32	<2
05/17/13	9:20:00AM	58	0.88	33	<2
05/17/13	10:20:00AM	112	0.83	34	<2
05/17/13	11:18:00AM	110	0.51	35	<2
05/17/13	12:22:00PM	101	0.60	36	<2
05/17/13	1:23:00PM	117	0.41	37	<2

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
05/17/13	2:17:00PM	108	0.32	38,39	2,<2
05/17/13	3:20:00AM	105	0.33	40	<2
05/17/13	4:20:00PM	125	0.58	41	<2
05/17/13	-	-	-	-	-
05/17/13	8:30:00PM	106	3.09	42	<2
05/17/13	11:47:00PM	93	3.44	44	<2
05/18/13	12:47:00AM	99	1.66	45	<2
05/18/13	2:55:00AM	85	0.73	45	<2
05/18/13	5:30:00AM	110	1.60	46	<2
05/18/13	8:40:00AM	120	2.01	47	<2
05/18/13	9:40:00AM	161	0.90	48	<2
05/18/13	10:40:00AM	153	0.53	49	<2
05/18/13	11:40:00AM	141	5.89	50	<2
05/18/13	12:40:00PM	133	0.88	51	<2
05/18/13	1:40:00PM	137	0.91	52	<2
05/18/13	2:40:00PM	104	0.80	53	<2
05/18/13	3:40:00AM	125	0.73	54	<2
05/18/13	4:40:00PM	167	1.24	56	<2
05/18/13	8:40:00PM	64	2.53	57	<2
05/18/13	11:40:00PM	58	1.31	58	2
05/20/13	7:45:00AM	31	0.85	61	<2
05/20/13	8:45:00AM	32	0.69	62	<2
05/20/13	9:45:00AM	100	0.47	63	<2
05/20/13	10:45:00AM	172	0.47	64	<2
05/20/13	11:45:00AM	165	0.41	65	<2
05/20/13	12:45:00PM	140	0.45	66, 67	3,<2
05/20/13	1:45:00PM	100	0.62	68	<2
05/20/13	2:45:00PM	104	0.42	69	<2
05/20/13	3:45:00PM	104	0.43	70, 71	2,2
05/20/13	4:45:00PM	78	0.68	72	<2
05/20/13	5:45:00PM	82	0.52	73	<2
05/20/13	6:45:00PM	114	1.03	74	2
05/20/13	8:00:00PM	90	1.20	75	<2
05/20/13	9:00:00PM	78	0.89	76, 77	2,<2
05/20/13	11:15:00PM	72	0.85	78, 79	2,<2
05/21/13	3:05:00AM	66	1.01	80	<2
05/21/13	8:20:00AM	59	1.90	81	<2
05/21/13	9:20:00AM	81	1.44	82	<2
05/21/13	10:20:00AM	73	0.95	83,84	3,<2

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
05/21/13	11:20:00AM	106	1.19	85	<2
05/21/13	12:20:00PM	79	0.89	86	<2
05/21/13	1:20:00PM	100	1.30	87	<2
05/21/13	2:20:00PM	105	1.11	88	<2
05/21/13	3:20:00PM	112	1.48	89	<2
05/21/13	4:20:00PM	120	9.25	90	<2
05/21/13	5:20:00PM	116	1.46	91	<2
05/21/13	6:20:00PM	102	1.66	92	<2
05/21/13	7:45:00PM	96	1.92	93	<2
05/21/13	10:00:00PM	108	1.62	94	<2
05/21/13	11:45:00PM	119	1.67	95	<2
05/22/13	5:40:00AM	86	2.78	96	<2
05/22/13	9:21:00AM	136	2.01	97	<2
05/22/13	10:21:00AM	159	4.86	98	<2
05/22/13	11:21:00AM	113	1.24	99	<2
05/22/13	12:20:00PM	116	1.77	100	<2
05/22/13	1:20:00PM	142	2.14	101	<2
05/22/13	2:20:00PM	101	1.28	102	2
05/22/13	3:20:00PM	69	1.11	103	<2
05/22/13	4:20:00PM	64	1.15	104	<2
05/22/13	5:20:00PM	83	0.75	105	<2
05/22/13	6:20:00PM	112	0.98	106	<2
05/22/13	7:20:00PM	119	1.45	107	<2
05/23/13	4:05:00AM	102	1.18	109	<2
05/23/13	9:45:00AM	144	0.97	110	<2
05/23/13	10:45:00AM	104	1.29	111	<2
05/23/13	11:45:00AM	151	3.12	112	<2
05/23/13	12:45:00PM	136	2.06	113	<2
05/23/13	1:45:00PM	118	1.31	114	<2
05/23/13	2:45:00PM	167	2.44	115	<2
05/23/13	3:45:00PM	132	1.92	116	<2
05/23/13	4:45:00PM	123	1.44	117,118	2,<2
05/23/13	5:45:00PM	119	1.39	119	<2
05/23/13	6:45:00PM	122	0.99	120	<2
05/23/13	8:45:00PM	112	2.03	121	<2
05/24/13	12:09:00AM	121	1.57	122	<2
05/24/13	4:59:00AM	124	2.58	123	<2
05/24/13	8:20:00AM	94	1.81	124	<2
05/24/13	9:20:00AM	114	1.74	125	<2
05/24/13	10:20:00AM	112	1.29	126	<2
05/24/13	11:20:00AM	138	1.53	127	<2
05/24/13	12:20:00PM	139	2.77	128	<2

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
05/24/13	1:20:00PM	125	0.94	129	<2
05/24/13	2:20:00PM	111	1.32	130	<2
05/24/13	3:20:00PM	108	1.21	131	<2
05/24/13	4:20:00PM	120	1.35	132	<2
05/24/13	5:20:00PM	93	2.76	133	<2
05/24/13	18:20:00PM	81	1.56	134	<2
05/24/13	7:30:00PM	75	1.86	135	<2
05/28/13	10:20:00AM	113	1.10	148	<2
05/28/13	11:20:00AM	84	1.42	-	-
05/28/13	12:20:00PM	101	2.15	-	-
05/28/13	1:20:00PM	81	2.25	-	-
05/28/13	2:20:00PM	61	1.78	-	-
05/28/13	3:20:00PM	59	1.38	-	-
05/28/13	4:20:00PM	72	1.26	-	-
05/28/13	5:20:00PM	70	1.69	-	-
05/28/13	6:20:00PM	90	1.53	-	-
05/29/13	10:50:00AM	150	1.61	149	<2
05/29/13	11:50:00AM	131	1.79	-	-
05/29/13	12:50:00PM	111	1.65	-	-
05/29/13	1:50:00PM	93	1.54	-	-
05/29/13	2:50:00PM	112	1.49	-	-
05/29/13	3:50:00PM	110	2.05	-	-
05/29/13	4:50:00PM	121	1.77	-	-
05/29/13	5:50:00PM	124	2.27	-	-
05/29/13	6:50:00PM	123	1.95	-	-
05/29/13	7:50:00PM	123	2.93	-	-
05/30/13	1:10:00AM	118	1.64	-	-
05/30/13	7:05:00AM	138	1.83	-	-
05/30/13	8:00:00AM	114	2.46	-	-
05/30/13	9:00:00AM	206	1.38	-	-
05/30/13	10:00:00AM	269	1.28	150	<2
05/30/13	11:00:00AM	210	0.98	-	-
05/30/13	12:00:00PM	250	0.71	-	-
05/30/13	1:00:00PM	140	0.60	-	-
05/30/13	2:00:00PM	133	0.78	-	-
05/30/13	3:00:00PM	162	0.81	-	-
05/30/13	4:00:00PM	176	0.95	-	-
05/30/13	5:00:00PM	142	0.89	-	-
05/30/13	6:00:00PM	129	0.85	-	-
05/30/13	7:00:00PM		No Discharge, during backwash		
05/30/13	8:41:00PM	67	1.13	-	-
05/31/13	12:16:00AM	72	1.60	151	<2
05/31/13	3:55:00AM	36	1.59	-	-
05/31/13	6:12:00AM	46	1.89	-	-

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
05/31/13	7:50:00AM	134	0.92	-	-
05/31/13	8:50:00AM	152	0.88	-	-
05/31/13	9:50:00AM	170	0.91	-	-
05/31/13	10:50:00AM	157	0.85	-	-
05/31/13	11:50:00AM	87	0.70	-	-
05/31/13	12:50:00PM	170	1.04	-	-
05/31/13	1:50:00PM	120	0.87	-	-
05/31/13	2:50:00PM	111	0.60	-	-
05/31/13	3:50:00PM	140	0.92	152	2
05/31/13	4:50:00PM	189	0.50	-	-
05/31/13	5:50:00PM	86	0.53	-	-
05/31/13	6:50:00PM	No Discharge			
05/31/13	10:56:00PM	25	1.14	-	-
06/03/13	2:46:00AM	15	1.29	154	<2
06/03/13	12:00:00PM	81	1.15	-	-
06/03/13	1:50:00PM	111	1.76	-	-
06/03/13	2:50:00PM	112	2.60	-	-
06/03/13	3:50:00PM	90	3.99	-	-
06/03/13	4:55:00PM	151	3.51	-	-
06/03/13	6:00:00PM	130	3.30	-	-
06/03/13	6:55:00PM	125	2.60	-	-
06/04/13	1:03:00AM	111	2.80	155	<2
06/04/13	4:47:00AM	86	4.83	-	-
06/04/13	9:00:00AM	165	7.31	-	-
06/04/13	10:00:00AM	128	2.72	-	-
06/04/13	11:00:00AM	122	1.75	-	-
06/04/13	12:00:00PM	94	4.84	-	-
06/04/13	1:00:00PM	116	3.09	-	-
06/04/13	2:00:00PM	96	3.06	-	-
06/04/13	4:00:00PM	98	3.50	-	-
06/04/13	8:30:00PM	64	2.25	-	-
06/05/13	9:05:00AM	60	2.00	156	<2
06/05/13	10:05:00AM	86	1.12	-	-
06/05/13	11:05:00AM	118	1.17	-	-
06/05/13	2:40:00PM	86	1.41	-	-
06/05/13	9:30:00PM	79	1.56	-	-
06/06/13	3:15:00AM	91	2.53	-	-
06/06/13	6:15:00AM	85	1.49	-	-
06/06/13	8:45:00AM	51	1.69	157	<2
06/07/13	6:40:00AM	53	3.17	-	-
06/07/13	4:50:00PM	17	3.20	158	<2
06/08/13	No Discharge				
06/09/13	8:45:00AM	15	2.74	159	<2
06/10/13	12:40:00PM	28	1.96	160	<2

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
06/10/13	1:40:00PM	34	2.31	-	-
06/10/13	2:40:00PM	54	2.60	-	-
06/10/13	3:40:00PM	54	2.16	-	-
06/10/13	4:40:00PM	58	2.53	-	-
06/10/13	5:40:00PM	61	1.74	-	-
06/10/13	6:40:00PM	66	3.76	-	-
06/10/13	9:10:00PM	72	2.60	-	-
06/10/13	3:10:00AM	70	3.21	-	-
06/10/13	6:05:00AM	49	1.11	-	-
06/11/13	9:05:00AM	42	1.07	161	2
06/11/13	10:05:00AM	47	1.41	-	-
06/11/13	11:05:00AM	55	1.09	-	-
06/11/13	12:05:00PM	54	1.11	-	-
06/11/13	1:30:00PM	73	0.91	-	-
06/11/13	2:30:00PM	65	1.53	-	-
06/11/13	3:30:00PM	65	1.47	-	-
06/11/13	4:30:00PM	83	0.79	-	-
06/11/13	5:30:00PM	88	1.07	-	-
06/11/13	6:30:00PM	120	0.84	-	-
06/11/13	9:30:00PM	81	1.65	-	-
06/11/13	1:30:00AM	78	1.93	-	-
06/11/13	5:00:00AM	75	1.70	-	-
06/12/13	9:00:00AM	10	3.02	162	2
06/12/13	8:08:00AM	82	2.59	-	-
06/12/13	11:00:00AM	89	9.65	-	-
06/12/13	12:01:00PM	87	3.24	-	-
06/12/13	1:00:00PM	63	5.53	-	-
06/12/13	2:00:00PM	79	1.24	-	-
06/12/13	3:00:00PM	83	1.12	-	-
06/12/13	4:00:00PM	118	12.80	-	-
06/12/13	5:00:00PM	128	2.76	-	-
06/12/13	6:00:00PM	81	2.67	-	-
06/12/13	7:00:00PM	101	1.46	-	-
06/12/13	7:46:00PM	69	0.99	-	-
06/12/13	5:52:00AM	39	1.70	-	-
06/13/13	8:35:00AM	37	0.65	163	<2
06/13/13	9:35:00AM	41	0.79	-	-
06/13/13	10:35:00AM	43	0.56	-	-
06/13/13	11:35:00AM	44	0.65	-	-
06/13/13	12:37:00PM	51	0.96	-	-
06/13/13	2:05:00PM	56	1.08	-	-
06/13/13	3:05:00PM	69	0.13	-	-
06/13/13	4:05:00PM	142	0.86	-	-
06/13/13	5:05:00PM	122	1.08	-	-

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
06/13/13	6:05:00PM	100	0.99	-	-
06/13/13	7:32:00PM	124	1.42	-	-
06/13/13	9:42:00PM	94	1.14	-	-
06/13/13	12:03:00AM	28	1.15	-	-
06/13/13	4:59:00AM	45	1.12	-	-
06/13/13	5:52:00AM	54	1.16	-	-
06/14/13	9:20:00AM	54	0.66	164	<2
06/14/13	10:20:00AM	100	0.65	-	-
06/14/13	11:20:00AM	137	0.89	-	-
06/14/13	12:20:00PM	104	0.91	-	-
06/14/13	1:40:00PM	102	0.99	-	-
06/14/13	2:40:00PM	94	0.70	-	-
06/14/13	3:40:00PM	69	1.20	-	-
06/14/13	4:40:00PM	70	0.75	-	-
06/14/13	5:40:00PM	79	0.84	-	-
06/14/13	6:40:00PM	71	1.17	-	-
06/14/13	7:40:00PM	73	1.06	-	-
06/14/13	10:30:00PM	60	0.98	-	-
06/14/13	5:45:00AM	45	0.97	-	-
06/15/13	7:00:00AM	47	0.69	165	<2
06/15/13	11:35:00AM	52	0.85	-	-
06/15/13	7:10:00PM	46	2.04	-	-
06/16/13	7:30:00AM	28	1.71	166	<2
06/16/13	6:55:00PM	40	1.77	-	-
06/17/13	9:00:00AM	31	3.80	173	<2
06/17/13	10:00:00AM	49	0.79	-	-
06/17/13	11:00:00AM	26	1.24	-	-
06/17/13	12:00:00PM	47	1.11	-	-
06/17/13	1:00:00PM	47	1.16	-	-
06/17/13	2:00:00PM	79	0.97	-	-
06/17/13	3:00:00PM	67	1.76	-	-
06/17/13	4:00:00PM	74	1.02	-	-
06/17/13	5:00:00PM	67	1.00	-	-
06/17/13	6:00:00PM	68	1.44	-	-
06/17/13	9:10:00PM	98	0.96	-	-
06/17/13	3:34:00AM	37	0.84	-	-
06/18/13	8:30:00AM	50	1.02	173	<2
06/18/13	9:30:00AM	64	1.12	-	-
06/18/13	10:30:00AM	70	1.26	-	-
06/18/13	11:30:00AM	77	1.16	-	-
06/18/13	12:30:00PM	102	1.21	-	-
06/18/13	1:30:00PM	202	1.54	-	-
06/18/13	2:30:00PM	123	0.90	-	-
06/18/13	3:30:00PM	119	1.24	-	-

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
06/18/13	4:30:00PM	135	1.17	-	-
06/18/13	5:30:00PM	130	0.82	-	-
06/18/13	6:30:00PM	243	1.43	-	-
06/18/13	9:34:00PM	77	1.17	-	-
06/18/13	2:49:00AM	48	0.93	-	-
06/19/13	8:30:00AM	71	1.17	180	<2
06/19/13	9:30:00AM	76	1.19	-	-
06/19/13	10:30:00AM	81	1.26	-	-
06/19/13	11:30:00AM	74	1.09	-	-
06/19/13	12:30:00PM	-	1.21	-	-
06/19/13	1:30:00PM	106	1.28	-	-
06/19/13	1:30:00PM	-	1.11	-	-
06/19/13	2:30:00PM	118	1.33	-	-
06/19/13	3:30:00PM	99	1.08	-	-
06/19/13	4:30:00PM	107	1.24	-	-
06/19/13	5:30:00PM	1	1.39	-	-
06/19/13	9:00:00PM	1	1.39	-	-
06/19/13	2:50:00AM	99	1.11	-	-
06/20/13	8:20:00AM	73	0.93	189	<2
06/20/13	9:20:00AM	88	1.28	-	-
06/20/13	10:20:00AM	111	1.25	-	-
06/20/13	11:20:00AM	53	0.91	-	-
06/20/13	12:20:00PM	102	0.96	-	-
06/20/13	1:20:00PM	82	0.91	-	-
06/20/13	2:20:00PM	74	1.13	-	-
06/20/13	3:20:00PM	97	1.67	-	-
06/20/13	4:20:00PM	87	0.90	-	-
06/20/13	5:20:00PM	83	0.94	-	-
06/20/13	6:20:00PM	104	0.88	-	-
06/20/13	7:16:00PM	106	1.11	-	-
06/20/13	10:09:00PM	55	1.34	-	-
06/20/13	4:25:00AM	44	0.87	-	-
06/21/13	8:00:00AM	83	0.78	190	<2
06/21/13	9:00:00AM	73	1.08	-	-
06/21/13	10:00:00AM	85	1.50	-	-
06/21/13	11:00:00AM	122	1.26	-	-
06/21/13	12:00:00PM	106	1.28	-	-
06/21/13	1:00:00PM	73	0.77	-	-
06/21/13	2:00:00PM	71	0.54	-	-
06/21/13	3:00:00PM	55	1.20	-	-
06/21/13	4:00:00PM	74	0.79	-	-
06/21/13	5:00:00PM	92	1.06	-	-
06/21/13	6:00:00PM	89	0.75	-	-
06/21/13	9:13:00PM	50	0.81	-	-

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
06/21/13	12:25:00PM	36	0.81	-	-
06/21/13	5:10:00AM	30	0.92	-	-
06/21/13	7:00:00AM	33	1.28	-	-
06/22/13	7:00:00PM	22	1.35	-	-
06/23/13	8:55:00AM	37	1.61	191	<2
06/24/13	8:45:00AM	29	1.08	192	<2
06/24/13	9:45:00AM	83	1.12	-	-
06/24/13	10:45:00AM	116	1.48	-	-
06/24/13	11:45:00AM	127	1.22	-	-
06/24/13	12:45:00PM	114	1.33	-	-
06/24/13	2:00:00PM	112	1.78	-	-
06/24/13	3:00:00PM	118	1.79	-	-
06/24/13	4:00:00PM	166	1.59	-	-
06/24/13	5:00:00PM	114	1.09	-	-
06/24/13	6:00:00PM	125	1.15	-	-
06/24/13	8:00:00PM	67	0.97	-	-
06/24/13	10:20:00PM	58	0.84	-	-
06/24/13	12:30:00AM	56	1.01	-	-
06/24/13	3:45:00AM	54	0.74	-	-
06/24/13	5:30	58	0.88	-	-
06/25/13	11:10:00AM	60	2.03	194	<2
06/25/13	12:10:00PM	105	1.83	-	-
06/25/13	1:10:00PM	81	1.78	-	-
06/25/13	2:10:00PM	81	1.24	-	-
06/25/13	3:10:00PM	117	0.83	-	-
06/25/13	4:10:00PM	121	1.25	-	-
06/25/13	5:10:00PM	110	1.30	-	-
06/25/13	6:10:00PM	130	1.20	-	-
06/26/13	9:15:00AM	3	1.54	195	<2
06/26/13	10:15:00AM	155	1.24	-	-
06/26/13	11:15:00AM	195	1.49	-	-
06/26/13	12:15:00PM	170	1.39	-	-
06/26/13	1:15:00PM	159	1.35	-	-
06/26/13	2:15:00PM	184	1.58	-	-
06/26/13	3:15:00PM	180	0.91	-	-
06/26/13	4:15:00PM	161	1.01	-	-
06/26/13	5:15:00PM	208	1.25	-	-
06/26/13	6:15:00PM	198	1.00	-	-
06/26/13	7:00:00PM	183	0.96	-	-
06/26/13	8:41:00PM	134	1.54	-	-
06/26/13	11:49:00PM	122	1.71	-	-
06/26/13	2:04:00AM	78	1.67	-	-
06/26/13	5:50	70	1.18	-	-
06/27/13	8:15:00AM	149	1.59	196	<2

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
06/27/13	9:15:00AM	142	1.56	-	-
06/27/13	10:15:00AM	184	1.39	-	-
06/27/13	11:15:00AM	178	1.20	-	-
06/27/13	12:15:00PM	165	1.40	-	-
06/27/13	1:15:00PM	145	1.29	-	-
06/27/13	2:15:00PM	152	1.40	-	-
06/27/13	3:15:00PM	148	1.24	-	-
06/27/13	4:50:00PM	155	0.86	-	-
06/27/13	5:30:00PM	148	1.01	-	-
06/27/13	6:30:00PM	147	1.06	-	-
06/27/13	8:44:00PM	90	1.53	-	-
06/27/13	11:18:00PM	103	1.76	-	-
06/27/13	3:00:00AM	66	1.57	-	-
06/27/13	6:00	78	1.43	-	-
06/28/13	8:15:00AM	134	1.34	197	<2
06/28/13	9:15:00AM	162	1.79	-	-
06/28/13	10:15:00AM	181	1.63	-	-
06/28/13	11:15:00AM	157	1.95	-	-
06/28/13	2:45:00PM	102	1.67	-	-
06/28/13	3:45:00PM	107	1.98	-	-
06/28/13	4:45:00PM	170	1.68	-	-
06/28/13	7:15:00PM	94	1.85	-	-
06/28/13	11:07:00PM	67	1.30	-	-
06/28/13	3:34:00AM	77	1.35	-	-
06/28/13	6:22:00AM	60	1.78	-	-
06/29/13	7:00:00AM	-	-	198	<2
06/29/13	9:30:00AM	51	1.62	-	-
06/29/13	2:40:00AM	63	0.88	-	-
06/29/13	11:35:00PM	46	1.78	-	-
06/30/13	8:17:00AM	47	0.77	-	-
06/30/13	2:30:00PM	38	2.31	-	-
07/01/13	8:30:00AM	59	1.81	199	<2
07/01/13	9:30:00AM	92	0.78	-	-
07/01/13	10:30:00AM	137	0.94	-	-
07/01/13	11:30:00AM	155	1.37	-	-
07/01/13	12:30:00PM	155	1.07	-	-
07/01/13	3:05:00PM	92	1.62	-	-
07/01/13	4:05:00PM	138	2.52	-	-
07/01/13	5:05:00PM	149	2.62	-	-
07/01/13	11:30:00AM	88	3.57	-	-
07/02/13	6:00:00AM	78	3.30	-	-
07/02/13	7:50:00AM	78	1.79	200	<2
07/02/13	11:30:00AM	72	1.16	-	-
07/02/13	5:30:00AM	81	1.14	-	-

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
07/03/13	8:50:00AM	47	1.21	201	<2
07/03/13	4:00:00PM	-	-	-	-
07/04/13	11:30:00AM	46	1.82	202	<2
07/05/13	2:00:00PM	41	3.44	203	<2
07/08/13	-	37	1.23	203	<2
07/08/13	12:58:00 PM	79	2.81	-	-
07/08/13	2:26:00 PM	90	3.45	-	-
07/09/13	7:54:00 AM	74	1.91	204	<2
07/09/13	8:21:00 AM	53	1.61	-	-
07/09/13	9:12:00 AM	44	2.43	-	-
07/09/13	10:35:00 AM	54	3.32	-	-
07/10/13	7:30:00 AM	49	3.96	205	<2
08/12/13	9:10:00 AM	8	2.04	208	<2
08/13/13	2:45:00 PM	15	2.55	209	<2
08/13/13	3:45:00 PM	41	4.29	210	<2
08/13/13	4:45:00 PM	58	3.56	211	2
08/13/13	5:45:00 PM	64	4.64	212	<2
08/13/13	6:45:00 PM	79	4.84	213	<2
08/13/13	7:45:00 PM	97	7.79	214	<2
08/14/13	11:45:00 AM	62	4.22	215	<2
08/14/13	5:45:00 AM	71	6.71	216	<2
08/14/13	9:15:00 AM	63	5.07	217	<2
08/14/13	10:15:00 AM	80	3.17	218	<2
08/14/13	11:15:00 AM	92	2.04	219	<2
08/14/13	12:15:00 PM	113	1.92	220	<2
08/14/13	1:15:00 PM	136	2.34	221	<2
08/14/13	2:15:00 PM	160	2.08	222	<2
08/14/13	3:15:00 PM	138	1.61	223	<2
08/14/13	4:15:00 PM	146	3.58	224	<2
08/14/13	5:15:00 PM	152	3.27	225	<2
08/14/13	6:15:00 PM	169	3.12	226	<2
08/14/13	7:15:00 PM	158	4.48	227	<2
08/14/13	9:00:00 PM	133	3.92	228	<2
08/15/13	12:41:00 AM	140	4.13	229	<2
08/15/13	5:15:00 AM	92	3.07	230	<2
08/15/13	8:35:00 AM	221	3.75	231	<2
08/15/13	9:35:00 AM	180	2.22	232	<2
08/15/13	10:35:00 AM	167	2.14	233	<2
08/15/13	11:35:00 AM	177	2.34	234	<2
08/15/13	12:35:00 PM	175	2.93	235	<2
08/15/13	1:35:00 PM	183	2.46	236	<2
08/15/13	2:35:00 PM	216	2.32	237	<2
08/15/13	3:35:00 PM	175	1.99	238	<2
08/15/13	4:35:00 PM	177	2.20	239	<2

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
08/15/13	5:35:00 PM	160	2.93	240	<2
08/15/13	6:35:00 PM	161	2.42	241	<2
08/15/13	7:35:00 PM	156	2.73	242	<2
08/15/13	8:35:00 PM	162	1.55	243	<2
08/15/13	9:35:00 PM	170	2.21	244	<2
08/15/13	10:35:00 PM	146	1.12	245	<2
08/15/13	11:35:00 PM	169	3.30	246	<2
08/16/13	12:35:00 AM	198	2.91	248	<2
08/16/13	5:30:00 AM	165	2.09	249	<2
08/16/13	10:15:00 AM	233	11.60	250	<2
08/16/13	11:15:00 AM	243	6.16	251	<2
08/16/13	12:15:00 PM	211	5.85	252	<2
08/16/13	1:15:00 PM	183	3.68	253	<2
08/16/13	2:15:00 PM	164	4.47	254	<2
08/16/13	3:15:00 PM	163	4.23	255	<2
08/16/13	4:15:00 PM	160	3.89	256	<2
08/16/13	6:05:00 PM	158	8.07	257	<2
08/16/13	7:05:00 PM	135	5.47	258	<2
08/17/13	12:05:00 AM	80	2.87	259	<2
08/17/13	9:30:00 AM	150	3.29	260	<2
08/17/13	10:30:00 AM	140	4.69	261	<2
08/17/13	7:18:00 PM	103	3.82	262	<2
08/17/13	11:50:00 PM	103	3.85	263	<2
08/18/13	7:30:00 AM	17	2.85	264	<2
08/18/13	12:00:00 PM	66	14.30	265	<2
08/26/13	8:42:00 AM	40	3.24	347	<2
08/26/13	9:42:00 AM	38	3.28	348	<2
08/26/13	10:42:00 AM	25	2.70	349	<2
08/26/13	11:42:00 AM	26	3.19	350	<2
08/26/13	12:42:00 PM	28	2.25	351	<2
08/26/13	1:42:00 PM	62	2.34	352	<2
08/26/13	2:42:00 PM	58	2.45	353	<2
08/26/13	3:42:00 PM	39	2.81	354	<2
08/26/13	4:42:00 PM	50	2.82	355	<2
08/26/13	5:42:00 PM	42	3.09	356	<2
08/26/13	6:42:00 PM	42	3.79	357	<2
08/26/13	7:45:00 PM	49	5.42	358	<2
08/26/13	8:45:00 PM	125	3.08	359	<2
08/26/13	9:45:00 PM	144	3.02	360	<2
08/26/13	10:45:00 PM	131	2.28	361	<2
08/27/13	12:05:00 AM	121	3.35	362	<2
08/27/13	5:30:00 AM	95	3.82	363	<2
08/27/13	9:11:00 AM	74	6.30	364	<2
08/27/13	10:11:00 AM	124	3.72	365	<2

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
08/27/13	11:11:00 AM	140	3.04	366	<2
08/27/13	12:11:00 PM	141	3.22	367	<2
08/27/13	1:11:00 PM	134	2.46	368	<2
08/27/13	2:11:00 PM	131	4.76	369	<2
08/27/13	3:11:00 PM	129	2.36	370	<2
08/27/13	4:11:00 PM	129	3.29	371	<2
08/27/13	5:11:00 PM	143	3.00	372	<2
08/27/13	6:11:00 PM	77	3.74	373	<2
08/27/13	7:11:00 PM	135	1.68	374	<2
08/27/13	8:11:00 PM	198	3.11	375	<2
08/27/13	9:11:00 PM	187	2.23	376	<2
08/27/13	10:11:00 PM	141	2.30	377	<2
08/27/13	11:11:00 PM	167	2.35	378	<2
08/28/13	1:30:00 AM	121	3.82	379	<2
08/28/13	2:30:00 AM	110	4.04	380	<2
08/28/13	3:30:00 AM	123	4.89	381	<2
08/28/13	8:42:00 AM	96	6.95	382	<2
08/28/13	10:20:00 AM	110	6.00	-	-
08/28/13	11:20:00 AM	152	4.05	-	-
08/28/13	12:20:00 PM	150	3.43	-	-
08/28/13	1:20:00 PM	130	2.38	-	-
08/28/13	2:20:00 PM	109	1.99	-	-
08/28/13	3:20:00 PM	104	2.38	-	-
08/28/13	4:20:00 PM	127	2.67	-	-
08/28/13	5:20:00 PM	168	3.16	-	-
08/28/13	6:20:00 PM	174	3.35	-	-
08/28/13	7:20:00 PM	133	2.29	-	-
08/28/13	8:20:00 PM	120	1.99	-	-
08/28/13	9:20:00 PM	85	2.05	-	-
08/28/13	10:20:00 PM	111	2.22	-	-
08/28/13	11:20:00 PM	82	1.78	-	-
08/29/13	1:40:00 AM	96	3.14	384	<2
08/29/13	5:30:00 AM	110	3.59	-	-
08/29/13	7:30:00 AM	69	4.68	-	-
08/29/13	8:30:00 AM	80	18.00	-	-
08/29/13	9:30:00 AM	106	2.45	-	-
08/29/13	10:30:00 AM	99	3.50	-	-
08/29/13	11:30:00 AM	226	3.73	-	-
08/29/13	12:30:00 PM	80	3.05	-	-
08/29/13	1:30:00 PM	88	1.88	-	-
08/29/13	2:30:00 PM	78	1.48	-	-
08/29/13	3:30:00 PM	63	1.53	-	-
08/29/13	4:30:00 PM	72	1.83	-	-
08/29/13	5:30:00 PM	63	2.35	-	-

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
08/29/13	6:30:00 PM	137	3.11	-	-
08/29/13	7:20:00 PM	114	2.52	-	-
08/29/13	8:20:00 PM	157	2.48	-	-
08/29/13	9:20:00 PM	180	1.92	-	-
08/29/13	10:20:00 PM	124	1.93	-	-
08/29/13	11:20:00 PM	128	2.34	-	-
08/30/13	4:45:00 AM	147	2.45	-	-
09/09/13	12:30:00 PM	25	1.62	396	<2
09/10/13	1:30:00 PM	23	26.40	397	<2
09/11/13	7:20:00 PM	19	3.13	398	<2
09/12/13			No Discharge		
09/13/13	9:25:00 AM	30	5.94	399	<2
09/13/13	10:25:00 AM	58	4.73	-	-
09/13/13	11:25:00 AM	98	4.32	-	-
09/13/13	2:25:00 PM	59	4.16	-	-
09/13/13	4:50:00 PM	88	3.79	-	-
09/14/13	7:00:00 AM	66	2.09	400	<2
09/15/13	7:15:00 PM	38	2.26	401	<2
09/16/13	8:50:00 AM	66	4.45	402	<2
09/16/13	9:50:00 AM	107	3.19	-	-
09/16/13	10:50:00 AM	114	3.79	-	-
09/16/13	11:50:00 AM	109	3.28	-	-
09/16/13	12:50:00 PM	129	3.36	-	-
09/16/13	2:20:00 PM	118	2.89	-	-
09/16/13	4:10:00 PM	70	3.12	-	-
09/17/13	4:00:00 AM	47	5.21	-	-
09/17/13	8:55:00 AM	44	2.72	403	<2
09/17/13	9:55:00 AM	76	2.86	-	-
09/17/13	10:55:00 AM	88	1.91	-	-
09/17/13	2:16:00 PM	94	2.86	-	-
09/17/13	8:17:00 PM	80	2.53	-	-
09/18/13	5:00:00 AM	58	2.81	-	-
09/18/13	8:20:00 AM	49	3.30	404	<2
09/18/13	9:20:00 AM	57	3.11	-	-
09/18/13	10:20:00 AM	98	4.23	-	-
09/18/13	11:20:00 AM	94	3.21	-	-
09/18/13	12:20:00 PM	112	2.75	-	-
09/18/13	1:20:00 PM	97	2.86	-	-
09/18/13	3:50:00 PM	91	2.77	-	-
09/18/13	4:50:00 PM	81	2.72	-	-
09/18/13	8:30:00 PM	70	2.16	-	-
09/19/13	3:45:00 AM	80	3.84	405	<2
09/19/13	9:00:00 AM	25	10.60	-	-
09/19/13	10:00:00 AM	34	4.23	-	-

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
09/19/13	11:00:00 AM	74	2.20	-	-
09/19/13	12:00:00 PM	90	2.38	-	-
09/19/13	1:00:00 PM	101	2.88	-	-
09/19/13	7:30:00 PM	44	2.69	-	-
09/20/13	5:15:00 AM	55	3.58	-	-
09/20/13	8:35:00 AM	45	3.72	406	<2
09/20/13	9:35:00 AM	51	3.08	-	-
09/20/13	10:35:00 AM	45	2.84	-	-
09/20/13	11:35:00 AM	49	1.37	-	-
09/20/13	12:35:00 PM	51	1.42	-	-
09/20/13	2:55:00 PM	45	2.37	-	-
09/20/13	3:55:00 PM	58	2.11	-	-
09/20/13	8:10:00 PM	45	5.30	-	-
09/21/13	7:00:00 AM	47	2.30	-	-
09/21/13	1:42:00 PM	25	3.31	-	-
09/22/13		No Discharge this shift			
09/23/13	9:02:00 AM	41	3.98	407	<2
09/23/13	10:02:00 AM	92	3.82	-	-
09/23/13	11:02:00 AM	94	3.66	-	-
09/23/13	12:02:00 PM	57	2.11	-	-
09/23/13	2:30:00 PM	52	2.32	-	-
09/23/13	10:09:00 PM	28	2.20	-	-
09/24/13	5:39:00 AM	202	1.70	-	-
09/24/13	8:18:00 AM	27	1.51	408	<2
09/24/13	9:18:00 AM	46	1.63	-	-
09/24/13	10:18:00 AM	47	2.28	-	-
09/24/13	11:18:00 AM	37	2.11	-	-
09/24/13	12:18:00 PM	32	2.42	-	-
09/24/13	1:18:00 PM	34	2.36	-	-
09/24/13	2:18:00 PM	37	2.22	-	-
09/24/13	3:18:00 PM	31	2.19	-	-
09/24/13	8:30:00 PM	23	1.92	-	-
09/25/13	5:22:00 AM	21	1.55	-	-
09/25/13	8:37:00 AM	57	2.65	409	<2
09/25/13	9:37:00 AM	63	2.31	-	-
09/25/13	10:37:00 AM	41	2.41	-	-
09/25/13	11:37:00 AM	34	1.92	-	-
09/25/13	12:37:00 PM	38	1.88	-	-
09/25/13	1:37:00 PM	65	2.03	-	-
09/25/13	2:37:00 PM	38	2.48	-	-
09/25/13	5:37:00 PM	34	3.12	-	-
09/25/13	9:10:00 PM	33	3.40	-	-
09/26/13	4:45:00 AM	24	1.39	-	-
09/26/13	8:30:00 AM	21	1.98	410	<2

Table 6: Summary of Effluent Monitoring Results - Field Measurements

		Turbidity (NTU)[a]		Lead (µg/l)[b]	
Date	Time	Influent	Effluent	Sample Number	Reading
09/26/13	9:30:00 AM	38	2.03	-	-
09/26/13	10:30:00 AM	55	1.88	-	-
09/26/13	12:30:00 PM	45	2.19	-	-
09/26/13	2:49:00 PM	49	2.22	-	-
09/26/13	11:10:00 PM	35	1.59	-	-
09/27/13	No Discharge This Shift				

Notes:

(a) NTU = Nephelometric turbidity units. Measured by Dixon Marine Services.

(b) µg/l = micrograms per liter. Measured by Dixon Marine Services using a xxzzz Meter

(c) < = Not detected at concentration above the reporting limit

Table 7: Summary of Effluent Monitoring Results - Laboratory Data

Sample Name	Date	Lead (µg/l)[a]	Zinc (µg/l)	TPH-Diesel Range Organics [C10-C24] (µg/l)	TPH-Motor Oil Range Organics [C24-C36] (µg/l)	Total Suspended Solids (mg/L)[b]
MLEF101	05/14/13	<2.5[c]	<5.0	<50	<300	<5
MLEF102	05/15/13	<5.0	< 20	<49	<290	<5
MLEF103	05/16/13	<2.5	<1.7	<20	<98	<5
MLEF104	05/17/13	0.89 J[d]	<20	24 J	<100	<5
MLEF105	05/18/13	<2.5	2.5 J	<21	<100	<5
MLEF106	05/20/13	<2.5	1.4 J	18 J	<100	<5
MLEF107	05/21/13	<2.5	1.3 J	<20	<98	<5
MLEF108	05/22/13	<2.5	<20	<20	<100	<5
MLEF109	05/23/13	1.0 J	<20	<21	<110	<5
MLEF110	05/24/13	<2.5	<5.0	<20	<98	<5
MLEF111	05/30/13	1.0 J	<20	<20	<100	<5
MLEF112	06/06/13	5.2	2.4 J	<21	<110	11
MLEF113	06/11/13	1.8 J	<16	<21	<100	<5
MLEF114	06/17/13	1.9 J	3.4 J	9.0 J	<110	<5
MLEF115	06/24/13	-	-	19 J	<110	<5
MLEF115TA	06/24/13	<1.0	<20	-	-	-
MLEF116	07/01/13	<1.3	5.7 J	16 J	<110	<5
MLEF116TA	07/01/13	<1.0	-	-	-	-
MLEF117	07/08/13	<1.30	3.5 J	<23	<110	<5
MLEF117TA	07/08/13	<1.0	-	-	-	-
MLEF118	08/16/13	<1.0	<20	<52	<100	<11
MLEF119	08/19/13	<1.0	<20	<97	<190	<11
MLEF120	08/27/13	<1.0	<20	<51	<100	<10
MLEF121	09/04/13	<1.0	<20	<52	<100	<10
MLEF122	09/16/13	<1.0	<20	<51	<100	<10
MLEF123	09/23/13	<1.0	<20	<50	<100	<10

Notes:

(a) µg/l = micrograms per liter

(b) mg/l = milligrams per liter

(c) <= Analyte was not detected at or above the level of detection (LOD)

(d) J = Estimated value

Table 8: Summary of Effluent Monitoring Results - Polymer Data

Date	Time	Location	Setting Time (seconds)	Residual Polymer (parts per million)[(a)]
05/15/13	15:00	WTP Effluent	1,800+	non detectable
05/16/13	13:30	WTP Effluent	1,800+	non detectable
05/17/13	12:45	WTP Effluent	1,800+	non detectable
05/18/13	11:00	WTP Effluent	1,800+	non detectable
05/20/13	13:30	WTP Effluent	1,800+	non detectable
05/21/13	12:30	WTP Effluent	1,800+	non detectable
05/22/13	14:00	WTP Effluent	1,800+	non detectable
05/23/13	16:50	WTP Effluent	1,800+	non detectable
05/24/13	15:30	WTP Effluent	1,800+	non detectable
05/28/13	15:00	WTP Effluent	1,800+	non detectable
05/29/13	13:30	WTP Effluent	1,800+	non detectable
05/30/13	14:00	WTP Effluent	1,800+	non detectable
05/31/13	10:30	WTP Effluent	1,800+	non detectable
06/03/13	15:15	WTP Effluent	1,800+	non detectable
06/04/13	11:00	WTP Effluent	1,800+	non detectable
06/05/13	9:30	WTP Effluent	1,800+	non detectable
06/06/13	8:45	WTP Effluent	1,800+	non detectable
06/10/13	14:00	WTP Effluent	1,800+	non detectable
06/11/13	13:15	WTP Effluent	1,800+	non detectable
06/12/13	12:00	WTP Effluent	1,800+	non detectable
06/13/13	10:00	WTP Effluent	1,800+	non detectable
06/14/13	10:00	WTP Effluent	1,800+	non detectable
06/17/13	13:30	WTP Effluent	1,800+	non detectable
06/18/13	14:00	WTP Effluent	1,800+	non detectable
06/19/13	16:00	WTP Effluent	1,800+	non detectable
06/20/13	13:30	WTP Effluent	1,800+	non detectable
06/21/13	16:30	WTP Effluent	1,800+	non detectable
06/24/13	11:30	WTP Effluent	1,800+	non detectable
06/25/13	14:50	WTP Effluent	1,800+	non detectable
06/26/13	12:30	WTP Effluent	1,800+	non detectable
06/27/13	9:30	WTP Effluent	1,800+	non detectable
06/28/13	15:40	WTP Effluent	1,800+	non detectable
07/01/13	15:30	WTPEffluent	1,800+	nondetectable
07/02/13	9:00	WTPEffluent	1,800+	nondetectable
08/13/13	16:45	WTP Effluent	1,800+	non detectable
08/14/13	17:30	WTP Effluent	1,800+	non detectable
08/15/13	20:30	WTP Effluent	1,800+	non detectable
08/16/13	15:00	WTP Effluent	1,800+	non detectable
08/19/13	17:40	WTP Effluent	1,800+	non detectable
08/20/13	14:20	WTP Effluent	1,800+	non detectable
08/21/13	17:25	WTP Effluent	1,800+	non detectable
08/22/13	18:15	WTP Effluent	1,800+	non detectable
08/23/13	18:00	WTP Effluent	1,800+	non detectable
08/26/13	11:30	WTP Effluent	1,800+	non detectable

Table 8: Summary of Effluent Monitoring Results - Polymer Data

Date	Time	Location	Setting Time (seconds)	Residual Polymer (parts per million)[(a)]
08/27/13	20:00	WTP Effluent	1,800+	non detectable
08/28/13	11:30	WTP Effluent	1,800+	non detectable
08/29/13	11:15	WTP Effluent	1,800+	non detectable
08/30/13	18:00	WTP Effluent	1,800+	non detectable
09/03/13	15:30	WTP Effluent	1,800+	non detectable
09/04/13	18:00	WTP Effluent	1,800+	non detectable
09/05/13	16:00	WTP Effluent	1,800+	non detectable
09/06/13	15:00	WTP Effluent	1,800+	non detectable
09/13/13	12:30	WTP Effluent	1,800+	non detectable
09/17/13	9:30	WTP Effluent	1,800+	non detectable
09/18/13	13:30	WTP Effluent	1,800+	non detectable
09/19/13	13:00	WTP Effluent	1,800+	non detectable
09/20/13	12:15	WTP Effluent	1,800+	non detectable

Notes:

(a) Samples analyzed and reported by WaterSolve to Dixon Marine Services.

Table 9: Summary of Sediment Profiling Results
BTEX Compounds and Hydrocarbons

Sample Name	Sample Date	Benzene µg/kg[a]	Ethyl-benzene µg/kg	Toluene µg/kg	m,p-xylenes µg/kg	o-xylenes µg/kg	TPHg[b] mg/kg[c]	TPHd[d] mg/kg	TPHmo[e] mg/kg
DREDGE MANAGEMENT UNITS 1 THROUGH 4									
MLSE221-ML21	08/02/12	<5.0[f]	<5.0	<5.0	<5.0	<5.0	<1.0	16 Y[g]	76
MLSE220-ML20	08/02/12	<5.3	<5.3	<5.3	<5.3	<5.3	<1.1	17 Y	74
MLSE219-ML19	08/02/12	<5.1	<5.1	<5.1	<5.1	<5.1	<1.0	22 Y	84
MLSE218-ML18	08/02/12	<4.7	<4.7	<4.7	<4.7	<4.7	<0.94	36 Y	160
MLSE217-ML17	08/02/12	<4.6	<4.6	<4.6	<4.6	<4.6	<0.92	35 Y	130
MLSE210-ML10	08/02/12	<5.1	<5.1	<5.1	<5.1	<5.1	<1.0	27 Y	120
MLSE209-ML09	08/02/12	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	25 Y	110
MLSE212-ML12	08/02/12	<4.6	<4.6	<4.6	<4.6	<4.6	<0.93	67 Y	190
MLSE211-ML11	08/02/12	<5.1	<5.1	<5.1	<5.1	<5.1	<1.0	28 Y	120
MLSE208-ML08	08/02/12	<5.3	<5.3	<5.3	<5.3	<5.3	<1.1	32 Y	140
MLSE206-ML06	08/02/12	<5.4	<5.4	<5.4	<5.4	<5.4	<1.1	24 Y	140
MLSE207-ML07	08/02/12	<4.9	<4.9	<4.9	<4.9	<4.9	<0.98	24 Y	93
MLSE209-ML05	08/02/12	<4.9	<4.9	<4.9	<4.9	<4.9	<0.98	55 Y	120
MLSE202-ML02	08/02/12	<5.3	<5.3	<5.3	<5.3	<5.3	<1.1	13 Y	53
MLSE201-ML01	08/02/12	<4.8	<4.8	<4.8	<4.8	<4.8	<0.95	20 Y	73
MLSE203-ML03	08/02/12	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	16 Y	49
MLSE204-ML04	08/02/12	<4.7	<4.7	<4.7	<4.7	<4.7	<0.99	14 Y	58
MLSE213-ML13	08/01/12	<4.9	<4.9	<4.9	<4.9	<4.9	<1.0	16 Y	74
MLSE214-ML14	08/01/12	<4.6	<4.6	<4.6	<4.6	<4.6	<0.94	23 Y	100
MLSE215-ML15	08/01/12	<5.0	<5.0	<5.0	<5.0	<5.0	<0.99	36 Y	170
MLSE216-ML16	08/01/12	<5.4	<5.4	<5.4	<5.4	<5.4	<0.96	34 Y	120
DREDGE MANAGEMENT UNIT 5									
MLEX214-B 0.5	07/01/13	<1.1	<1.1	<1.1	<1.1	<1.1	-	14 Y	62
MLEX214-B 1	07/01/13	<1.1	<1.1	<1.1	<1.1	<1.1	-	10 Y	50
MLEX214-B 2	07/01/13	<1.0	<1.0	<1.0	<1.0	<1.0	-	11 Y	48
MLEX219-B 0.5	07/01/13	<1.1	<1.1	<1.1	<1.1	<1.1	-	28 Y	99
MLEX219-B 1	07/01/13	<0.91	<0.91	<0.91	<0.91	<0.91	-	29 Y	110
MLEX219-B 2	07/01/13	<0.95	<0.95	<0.95	<0.95	<0.95	-	30 Y	110
MLEX220-B 0.5	07/01/13	<1.1	1.6 J[h]	7.0	5.7 C[i]	1.8 C J	-	13 Y	78
MLEX220-B 1	07/01/13	<0.91	<0.91	2.1 C J	<0.91	<0.91	-	14 Y	140
MLEX220-B 2	07/01/13	<0.98	<0.98	<0.98	<0.98	<0.98	-	13 Y	84
MLEX223-B 0.5	07/01/13	<0.99	<0.99	<0.99	<0.99	<0.99	-	30 Y	120
MLEX223-B 1	07/01/13	<0.97	<0.97	<0.97	<0.97	<0.97	-	34 Y	150
MLEX223-B 2	07/01/13	<0.93	<0.93	<0.93	<0.93	<0.93	-	26 Y	170
MLEX226-B 0.5	07/01/13	<0.98	<0.98	<0.98	<0.98	<0.98	-	19 Y	88
MLEX226-B 1	07/01/13	<0.98	<0.98	<0.98	<0.98	<0.98	-	21 Y	96
MLEX226-B 2	07/01/13	<0.93	<0.93	2.9 C J	<0.93	<0.93	-	21 Y	110

Table 9: Summary of Sediment Profiling Results
BTEX Compounds and Hydrocarbons

Sample Name	Sample Date	Benzene µg/kg[(a)]	Ethyl-benzene µg/kg	Toluene µg/kg	m,p-xylenes µg/kg	o-xylenes µg/kg	TPHg[(b)] mg/kg[(c)]	TPHd[(d)] mg/kg	TPHmo[(e)] mg/kg
NORTH ARM									
MLSE-2-313-2	08/27/13	<1.9	<0.96	<1.9	<0.96	<0.96	-	22 Y	46
MLSE-2-313-D	08/27/13	<2.0	<1.0	<2.0	<1.0	<1.0	-	120 Y	490
MLSE-2-316-2	08/27/13	<2.0	<1.0	<2.0	<1.0	<1.0	-	33 Y	140
MLSE-2-316-4	08/27/13	<2.0	<1.0	<2.0	<1.0	<1.0	-	46 Y	99
MLSE-2-314-2	08/27/13	<1.9	<0.96	<1.9	<0.96	<0.96	-	36 Y	79
MLSE-2-314-4	08/27/13	<1.9	<0.93	<1.9	<0.93	<0.93	-	0.43 J	3.7 J
MLSE-2-310-2	08/27/13	<1.9	<0.93	1.1 J	<0.93	<0.93	-	240 Y	1,400
MLSE-2-310-4	08/27/13	<1.9	<0.93	<1.9	<0.93	<0.93	-	340 Y	1,100
MLSE-2-311-2	08/27/13	<2.1	<1.0	<2.1	<1.0	<1.0	-	59 Y	190
MLSE-2-311-4	08/27/13	<2.2	<1.1	<2.2	<1.1	<1.1	-	28 Y	57
MLSE-2-309-2	08/27/13	<2.0	<0.99	<2.0	<0.99	<0.99	-	3.5 Y	37
MLSE-2-309-4	08/27/13	<2.0	<1.0	<2.0	<1.0	<1.0	-	0.78 J	8.6
MLSE-2-301-2	08/27/13	<1.9	<0.95	<1.9	<0.95	<0.95	-	2.6 Y	36
MLSE-2-301-4	08/27/13	<2.2	<1.1	<2.2	<1.1	<1.1	-	90 Y	490
MLSE-2-300-1.5	08/27/13	<2.0	<1.0	<2.0	<1.0	<1.0	-	32 Y	220
MLSE-2-300-3.0	08/27/13	<2.2	<1.1	<2.2	<1.1	<1.1	-	2.3 Y	61

Notes:

(a) µg/kg = micrograms per kilogram

(b) TPHg = TPH-Gasoline Range Organics [C7-C12].

(c) mg/kg = milligrams per kilogram.

(d) TPHd = TPH-Diesel Range Organics [C10-C24].

(e) TPHmo = TPH-Motor Oil Range Organics [C24-C36].

(f) < = Not detected above reporting limit.

(g) Y = Laboratory note: "Sample exhibits chromatographic pattern which does not resemble standard "

(h) J = Estimated value

(i) C = Laboratory reports, "Presence confirmed, bur RPD between columns exceeds 40%"

Table 10: Summary of Sediment Profiling Results - Pesticides

Sample Name	Sample Date	Alpha-BHC µg/kg[a]	Beta-BHC µg/kg	gamma-BHC µg/kg	delta-BHC µg/kg	Hepta-chlor µg/kg	Aldrin µg/kg	Heptachlor epoxide µg/kg	Endo-sulfan-I µg/kg	Dieldrin µg/kg	4,4-DDE µg/kg	Endrin µg/kg	Endo-sulfan-II µg/kg	Endosulfan-Sulfate µg/kg	4,4-DDD µg/kg	Endrin Aldehyde µg/kg	4,4,-DDT µg/kg	Alpha-chlordane µg/kg	Gamma-chlordane µg/kg	Metho-xychlor µg/kg	Toxa-phene µg/kg
DREDGE MANAGEMENT UNITS 1 THROUGH 4																					
MLSE221-ML21	08/02/12	<34[b]	<34	<34	<34[c]	<34	<34	<34	<34	<67	<67	<67	<67	<67	<67	<67	<67	<34	<34	<340	<1,200
MLSE220-ML20	08/02/12	<34	<34	<34	<34	<34	<34	<34	<34	<67	<67	<67	<67	<67	<67	<67	<67	<34	<34	<340	<1,200
MLSE219-ML19	08/02/12	<34	<34	<34	<34	<34	<34	<34	<34	<67	<67	<67	<67	<67	<67	<67	<67	<34	<34	<340	<1,200
MLSE218-ML18	08/02/12	<34	<34	<34	<34	<34	<34	<34	<34	<67	<67	<67	<67	<67	<67	<67	<67	<34	<34	<340	<1,200
MLSE217-ML17	08/02/12	<34	<34	<34	<34	<34	<34	<34	<34	<66	<66	<66	<66	<66	<66	<66	<66	<34	<34	<340	<1,200
MLSE210-ML10	08/02/12	<34	<34	<34	<34	<34	<34	<34	<34	<67	<67	<67	<67	<67	<67	<67	<67	<34	<34	<340	<1,200
MLSE209-ML09	08/02/12	<34	<34	<34	<34	<34	<34	<34	<34	<66	<66	<66	<66	<66	<66	<66	<66	<34	<34	<340	<1,200
MLSE212-ML12	08/02/12	<34	<34	<34	<34	<34	<34	<34	<34	<67	<67	<67	<67	<67	<67	<67	<67	<34	<34	<340	<1,200
MLSE211-ML11	08/02/12	<33	<33	<33	<33	<33	<33	<33	<33	<65	<65	<65	<65	<65	<65	<65	<65	<33	<33	<340	<1,200
MLSE208-ML08	08/02/12	<34	<34	<34	<34	<34	<34	<34	<34	<66	<66	<66	<66	<66	<66	<66	<66	<34	<34	<340	<1,200
MLSE206-ML06	08/02/12	<34	<34	<34	<34	<34	<34	<34	<34	<67	<67	<67	<67	<67	<67	<67	<67	<34	<34	<340	<1,200
MLSE207-ML07	08/02/12	<34	<34	<34	<34[c]	<34	<34	<34	<34	<66	<66	<66	<66	<66	<66	<66	<66	<34	<34	<340[c]	<1,200
MLSE209-ML05	08/02/12	<34	<34	<34	<34[c]	<34	<34	<34	<34	<66	<66	<66	<66	<66	<66	<66	<66	<34	<34	<340[c]	<1,200
MLSE202-ML02	08/02/12	<34	<34	<34	<34[c]	<34	<34	<34	<34	<66	<66	<66	<66	<66	<66	<66	<66	<34	<34	<340[c]	<1,200
MLSE201-ML01	08/02/12	<34	<34	<34	<34[c]	<34	<34	<34	<34	<66	<66	<66	<66	<66	<66	<66	<66	<34	<34	<340[c]	<1,200
MLSE203-ML03	08/02/12	<34	<34	<34	<34[c]	<34	<34	<34	<34	<65	<65	<65	<65	<65	<65	<65	<65	<34	<34	<340[c]	<1,200
MLSE204-ML04	08/02/12	<34	<34	<34	<34[c]	<34	<34	<34	<34	<65	<65	<65	<65	<65	<65	<65	<65	<34	<34	<340[c]	<1,200
MLSE213-ML13	08/01/12	<34	<34	<34	<34[c]	<34	<34	<34	<34	<66	<66	<66	<66	<66	<66	<66	<66	<34	<34	<340[c]	<1,200
MLSE214-ML14	08/01/12	<34	<34	<34	<34[c]	<34	<34	<34	<34	<65	<65	<65	<65	<65	<65	<65	<65	<34	<34	<340[c]	<1,200
MLSE215-ML15	08/01/12	<34	<34	<34	<34[c]	<34	<34	<34	<34	<66	<66	<66	<66	<66	<66	<66	<66	<34	<34	<340[c]	<1,200
MLSE216-ML16	08/01/12	<34	<34	<34	<34[c]	<34	<34	<34	<34	<66	<66	<65	<65	<65	<65	<65	<65	<34	<34	<340[c]	<1,200
DREDGE MANAGEMENT UNIT 5																					
MLEX214-B 0.5	07/01/13	<11	<11	<11	<11	<11	<11	<11	<11	<23	<23	<23	<23	<23	<23[c]	<23	<23[c]	<11	<11	<110	<610
MLEX214-B 1	07/01/13	<11	<11	<11	<11	<11	<11	<11	<11	<23	<23	<23	<23	<23	<23	<23	<23	<11	<11	<110	<600
MLEX214-B 2	07/01/13	<11	<11	<11	<11	<11	<11	<11	<11	<23	<23	<23	<23	<23	<23	<23	<23	<11	<11	<110	<600
MLEX219-B 0.5	07/01/13	<11	<11	<11	<11	<11	<11	<11	<11	<23	<23	<23	<23	<23	<23	<23	<23	<11	<11	<110	<600
MLEX219-B 1	07/01/13	1.3 C[d] J[e]	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<3.4	<23	<3.4[c]	<3.4	<3.4[c]	<23[c]	<3.4[c]	<23[c]	<1.7	<1.7	<110	<91
MLEX219-B 2	07/01/13	6.3 C J	7.7 C J	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<5.7	<23	<5.7[c]	<5.7	<5.7[c]	<23	<5.7[c]	<23[c]	<2.9	<2.9	<110	<150
MLEX220-B 0.5	07/01/13	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<5.7	<23	<5.7[c]	<5.7	<5.7[c]	<23[c]	<5.7[c]	<23[c]	<2.8	<2.8	<110	<150
MLEX220-B 1	07/01/13	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<5.7	<23	<5.7[c]	<5.7	<5.7[c]	<23[c]	<5.7[c]	<23[c]	<2.9	<2.9	<110	<150
MLEX220-B 2	07/01/13	4.2 C J	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<5.6	<22	<5.6[c]	<5.6	<5.6[c]	<22[c]	<5.6[c]	<22[c]	<2.8	<2.8	<110	<150
MLEX223-B 0.5	07/01/13	<2.9	<2.9	13 C	<2.9	<2.9	<2.9	<2.9	<2.9	<5.7	<23	<5.7[c]	<5.7	<5.7[c]	<23[c]	<5.7[c]	<23[c]	<2.9	<2.9	<110	<150
MLEX223-B 1	07/01/13	<2.8	<2.8	<2.8	<2.8	2.2 C J	<2.8	2.5 C J	<2.8	<5.6	<22	<5.6[c]	<5.6	<5.6[c]	<22[c]	<5.6[c]	<22[c]	<2.8	<2.8	<110	<150
MLEX223-B 2	07/01/13	6.4 C J	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<5.6	<22	<5.6[c]	<5.6	<5.6[c]	<22[c]	<5.6[c]	<22[c]	<2.8	<2.8	<110	<150
MLEX226-B 0.5	07/01/13	<11	<11	<11	<11	<11	<11	<11	<11	<23	<23	<23	<23	<23	<23	<23	<23	<11	<11	<110	<600
MLEX226-B 1	07/01/13	<11	<11	<11	<11	<11	<11	<11	<11	<23	<23	<23	<23	<23	<23	<23	<23	<11	<11	<110	<610
MLEX226-B 2	07/01/13	<11	<11	<11	<11	<11	<11	<11	<11	<23	<23	<23	<23	<23	<23	<23	<23	<11	<11	<110	<600

Table 10: Summary of Sediment Profiling Results - Pesticides

Sample Name	Sample Date	Alpha-BHC µg/kg[(a)]	Beta-BHC µg/kg	gamma-BHC µg/kg	delta-BHC µg/kg	Hepta-chlor µg/kg	Aldrin µg/kg	Heptachlor epoxide µg/kg	Endo-sulfan-I µg/kg	Dieldrin µg/kg	4,4-DDE µg/kg	Endrin µg/kg	Endo-sulfan-II µg/kg	Endosulfan-Sulfate µg/kg	4,4-DDD µg/kg	Endrin Aldehyde µg/kg	4,4,-DDT µg/kg	Alpha-chlordane µg/kg	Gamma-chlordane µg/kg	Metho-xychlor µg/kg	Toxa-phene µg/kg
NORTH ARM																					
MLSE-2-313-2	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-313-D	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-316-2	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-316-4	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-314-2	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-314-4	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-310-2	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	23	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-310-4	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	8.6	<5.0	<5.0	<5.0	26	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-311-2	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-311-4	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-309-2	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-309-4	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-301-2	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-301-4	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.8	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-300-1.5	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100
MLSE-2-300-3.0	08/27/13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50[(f)]	<50[(f)]	<5.0	<100

Notes:

(a) µg/kg = micrograms per kilogram.
(b) < = Not detected above reporting limit.
(c) Laboratory notes: "CCV drift outside limits; average CCV drift within limits per method requirement".
(d) C = Presence confirmed, but RPD between columns exceeds 40%.
(e) J = Estimated value.
(f) Reported only as Chlordane - not distinguished between Alpha and Gamma.

Table 11: Summary of Sediment Profiling Results - Metals

Sample Name	Date	Total Cadmium mg/kg[a]	Total Chromium mg/kg	Total Lead mg/kg	Total Nickel mg/kg	Total Zinc mg/kg	WET[b] Cadmium µg/l[c]	WET Chromium µg/l	WET Lead µg/l	WET Nickel µg/l	WET Zinc µg/l	TCLP[d] Lead µg/l
DREDGE MANAGEMENT UNITS 1 THROUGH 4												
MLSE221-ML21	08/02/12	<0.24[e]	46	47	51	34	-	-	-	-	-	-
MLSE220-ML20	08/02/12	<0.25	65	10	73	27	-	790	-	-	-	-
MLSE219-ML19	08/02/12	<0.23	57	24	69	33	-	710	-	-	-	-
MLSE218-ML18	08/02/12	<0.25	34	24	41	40	-	-	-	-	-	-
MLSE217-ML17	08/02/12	<0.24	56	35	69	61	-	590	-	-	-	-
MLSE210-ML10	08/02/12	<0.25	45	66	49	77	-	-	7,400	-	-	-
MLSE209-ML09	08/02/12	<0.22	45	57	54	61	-	-	4,500	-	-	-
MLSE212-ML12	08/02/12	<0.24	38	73	42	70	-	-	2,900	-	-	-
MLSE211-ML11	08/02/12	<0.25	29	69	26	54	-	-	3,000	-	-	-
MLSE208-ML08	08/02/12	<0.24	37	67	38	54	-	-	3,200	-	-	-
MLSE206-ML06	08/02/12	0.46	41	280	38	120	-	-	1,700	-	-	230
MLSE207-ML07	08/02/12	<0.25	29	35	29	36	-	-	-	-	-	-
MLSE209-ML05	08/02/12	<0.23	36	33	38	46	-	-	-	-	-	-
MLSE202-ML02	08/02/12	<0.23	19	19	20	27	-	-	-	-	-	-
MLSE201-ML01	08/02/12	<0.23	24	2.0	23	13	-	-	-	-	-	-
MLSE203-ML03	08/02/12	<0.23	43	4.1	24	22	-	-	-	-	-	-
MLSE204-ML04	08/02/12	<0.24	23	12	23	19	-	-	-	-	-	-
MLSE213-ML13	08/01/12	<0.25	17	27	16	37	-	-	-	-	-	-
MLSE214-ML14	08/01/12	<0.23	36	3.5	30	13	-	-	-	-	-	-
MLSE215-ML15	08/01/12	<0.24	44	44	55	48	-	-	-	-	-	-
MLSE216-ML16	08/01/12	<0.24	34	12	40	25	-	-	-	-	-	-
DREDGE MANAGEMENT UNIT 5												
MLEX214-B 0.5	07/01/13	0.051 J[f]	13	0.51	14	8.9	-	-	-	-	-	-
MLEX214-B 1	07/01/13	0.055 J	16	0.38	16	8.5	-	-	-	-	-	-
MLEX214-B 2	07/01/13	0.072 J	18	0.92	18	9.7	-	-	-	-	-	-
MLEX219-B 0.5	07/01/13	0.12 J	27	11	25	20	-	-	-	-	-	-
MLEX219-B 1	07/01/13	0.12 J	26	3.3	26	16	-	-	-	-	-	-
MLEX219-B 2	07/01/13	0.13 J	29	4.3	27	18	-	-	-	-	-	-
MLEX220-B 0.5	07/01/13	0.042 J	10	0.37	11	7.3	-	-	-	-	-	-
MLEX220-B 1	07/01/13	0.037 J	11	0.44	12	10	-	-	-	-	-	-
MLEX220-B 2	07/01/13	0.046 J	13	0.42	15	8.2	-	-	-	-	-	-
MLEX223-B 0.5	07/01/13	0.18 J	80	18	96	28	-	-	-	-	-	-
MLEX223-B 1	07/01/13	0.11 J	42	10	44	21	-	-	-	-	-	-
MLEX223-B 2	07/01/13	0.044 J	14	2.0	15	7.9	-	-	-	-	-	-
MLEX226-B 0.5	07/01/13	0.10 J	51	4.7	43	17	-	-	-	-	-	-
MLEX226-B 1	07/01/13	0.089 J	43	5.1	36	18	-	-	-	-	-	-
MLEX226-B 2	07/01/13	0.057 J	21	2.7	19	10	-	-	-	-	-	-

Table 11: Summary of Sediment Profiling Results - Metals

Sample Name	Date	Total Cadmium mg/kg[(a)]	Total Chromium mg/kg	Total Lead mg/kg	Total Nickel mg/kg	Total Zinc mg/kg	WET[(b)] Cadmium µg/l[(c)]	WET Chromium µg/l	WET Lead µg/l	WET Nickel µg/l	WET Zinc µg/l	TCLP[(d)] Lead µg/l
NORTH ARM												
MLSE-2-313-2	08/27/13	0.63	53	240	42	35	<63	330	12,000	600	1,200	3,300
MLSE-2-313-D	08/27/13	0.79	42	760	32	140	<63	570	49,000	700	8,700	10,000
MLSE-2-316-2	08/27/13	1.1	46	540	45	160	<63	990	13,000	1,300	8,100	520
MLSE-2-316-4	08/27/13	0.49	97	27	120	29	<63	700	3,300	2,100	1,400	-
MLSE-2-314-2	08/27/13	0.28	36	2.2	41	14	<63	480	83 J	1,000	530 J	-
MLSE-2-314-4	08/27/13	0.15 J	30	3.5	14	6.7	<63	340	39,000	420	110 J	-
MLSE-2-310-2	08/27/13	2.2	43	2,200	41	320	68 J	400	160,000	1,400	24,000	32,000
MLSE-2-310-4	08/27/13	1.2	60	920	48	120	25 J	410	66,000	1,300	11,000	10,000
MLSE-2-311-2	08/27/13	0.50	37	73	28	79	<130	530	5,600	790	6,600	-
MLSE-2-311-4	08/27/13	0.54	60	5.1	130	27	<130	600	130 J	2,200	490 J	-
MLSE-2-309-2	08/27/13	0.33	40	35	27	29	<130	530	1,200	700	1,100	-
MLSE-2-309-4	08/27/13	<0.032	24	1.5	14	12	<130	570	70 J	1,300	450 J	-
MLSE-2-301-2	08/27/13	<0.031	37	2.7	24	9.8	<130	520	95 J	1,100	200 J	-
MLSE-2-301-4	08/27/13	0.84	41	240	63	82	<130	870	12,000	2,600	7,500	1,200
MLSE-2-300-1.5	08/27/13	0.68	840	35	690	170	<130	360	2,000	670	6,500	-
MLSE-2-300-3.0	08/27/13	0.32	74	2.6	25	12	<130	530	53 J	600	130 J	-

Notes:

(a) mg/kg = milligrams per kilogram.
(b) WET = Waste Extraction Test.
(c) µg/l = micrograms per liter.
(d) TCLP = Toxicity Characteristic Leaching Procedure.
(e) < = Not detected above reporting limit.
(f) J = Laboratory note: "Estimated value".

Table 12: Summary of Soil Profiling Results - BTEX Compounds and Hydrocarbons

Sample Name	Sample Date	Benzene µg/kg[(a)]	Ethyl-benzene µg/kg	Toluene µg/kg	Total Xylenes µg/kg	TPH-Gasoline Range Organics [C10-C28] µg/kg	TPH-Diesel Range Organics [C10-C28] mg/kg[(b)]	TPH-Motor Oil Range Organics [C24-C36] mg/kg
BB2BC201	10/22/12	<5.7[(c)]	<5.7	<5.7	<11	<290	<1.1	<57
BB2BC202	10/22/12	<5.8	<5.8	<5.8	<12	<290	<1.2	<58
BB2BC203	10/22/12	<5.7	<5.7	<5.7	<11	<290	<1.1	<57
BB2BC204	10/22/12	<5.6	<5.6	<5.6	<11	<280	<1.1	<56

Notes:

(a) µg/kg = micrograms per kilogram.

(b) mg/kg = milligrams per kilogram.

(c) < = Not detected above reporting limit.

Table 13: Summary of Soil Profiling Results - Pesticides

Sample Name	Sample Date	Alpha-BHC µg/kg[(a)]	Beta-BHC µg/kg	gamma-BHC µg/kg	delta-BHC µg/kg	Hepta-chlor µg/kg	Aldrin µg/kg	Hepta-chlor epoxide µg/kg	Endo-sulfan-I µg/kg	Dieldrin µg/kg	4,4-DDE µg/kg
BB2BC201	10/22/12	<2.3[(b)]	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3
BB2BC202	10/22/12	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3
BB2BC203	10/22/12	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3
BB2BC204	10/22/12	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3

Sample Name	Sample Date	Endrin µg/kg	Endo-sulfan-II µg/kg	Endo-sulfan Sulfate µg/kg	4,4-DDD µg/kg	Endrin Aldehyde µg/kg	4,4,-DDT µg/kg	Alpha chlor-dane µg/kg	Gamma chlor-dane µg/kg	Metho-xychlor µg/kg	Toxa-phene µg/kg
BB2BC201	10/22/12	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<45
BB2BC202	10/22/12	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<46
BB2BC203	10/22/12	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<46
BB2BC204	10/22/12	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<45

Notes:

(a) µg/kg = micrograms per kilogram

(b) < = Not detected above reporting limit.

Table 14: Summary of Soil Profiling Results - Semivolatile Organic Compounds

Sample Name	Sample Date	Acenaph-thene µg/kg[(a)]	Acenaph-thylene µg/kg	Anthra-cene µg/kg	Benz(a)-anthracene µg/kg	Benzo(a)-pyrene µg/kg	Benzo(b)-fluoranthene µg/kg	Benzo(g,h,i)-perylene µg/kg	Benzo(k)-fluoranthene µg/kg
BB2BC201	10/22/12	<5.7[(b)]	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7
BB2BC202	10/22/12	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7
BB2BC203	10/22/12	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7
BB2BC204	10/22/12	<5.6	<5.6	<5.6	<5.6	<5.6	<5.6	<5.6	<5.6

Sample Name	Sample Date	Chrysene µg/kg	Dibenz(a,h) anthracene µg/kg	Fluor-anthene µg/kg	Fluorene µg/kg	Indeno(1,2,3-cd)pyrene µg/kg	Naph-thalene µg/kg	Phen-anthrene µg/kg	Pyrene µg/kg
BB2BC201	10/22/12	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7
BB2BC202	10/22/12	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7
BB2BC203	10/22/12	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7
BB2BC204	10/22/12	<5.6	<5.6	<5.6	<5.6	<5.6	<5.6	<5.6	<5.6

Notes:

(a) µg/kg = micrograms per kilogram

(b) < = Not detected above reporting limit.

Table 15: Summary of Soil Profiling Results - Metals and Horticultural Parameters

Sample Name	Sample Date	Total Antimony mg/kg[a]	TotalArsenic mg/kg	Total Barium mg/kg	Total Beryllium mg/kg	Total Boron mg/kg	Total Cadmium mg/kg	Total Chromium mg/kg	Total Cobalt mg/kg	Total Copper mg/kg	Total Lead mg/kg	Total Molybdenum mg/kg	Total Nickel mg/kg
BB2BC201	10/22/12	0.61	2.6	53	<0.11[f]	<5.6	<0.14	100	6.4	7.8	2.1	<0.55	40
BB2BC202	10/22/12	<0.57	1.6	51	<0.11	<5.7	<0.14	70	6.0	6.8	1.9	<0.57	29
BB2BC203	10/22/12	<0.57	1.5	42	<0.11	<5.8	<0.14	70	7.3	7.4	2.1	<0.57	35
BB2BC204	10/22/12	<0.53	2.5	34	<0.11	<5.7	<0.13	57	9.2	7.0	2.2	<0.53	49
BB2BC205(A,B,C,D)	11/07/12	-	-	-	-	-	-	-	-	-	-	-	-
BB2BC206(A,B,C,D)	11/07/12	-	-	-	-	-	-	-	-	-	-	-	-
BB2BC207(A,B,C,D)	11/07/12	-	-	-	-	-	-	-	-	-	-	-	-
BB2BC208(A,B,C,D)	11/07/12	-	-	-	-	-	-	-	-	-	-	-	-
BB2BC209	11/15/12	-	-	-	-	-	-	-	-	-	-	-	-
BB2BC210	11/15/12	-	-	-	-	-	-	-	-	-	-	-	-

Sample Name	Sample Date	Total Selenium mg/kg	Total Silver mg/kg	Total Thallium mg/kg	Total Vanadium mg/kg	Total Zinc mg/kg	Total Mercury mg/kg	WET[b] Cadmium µg/l[c]	WET[b] Chromium mg/l[d]	pH -	Salinity ppth[e]	SAR[c] -
BB2BC201	10/22/12	<1.1	<0.28	<0.55	34	22	0.013		<0.25	9.42[g]	0.10	1.360
BB2BC202	10/22/12	<1.1	<0.28	<0.57	42	21	0.012		0.85	8.16[g]	<0.10	1.10
BB2BC203	10/22/12	<1.1	<0.29	<0.57	38	22	0.012		<0.25	8.36[g]	0.12	0.953
BB2BC204	10/22/12	<1.1	<0.26	<0.53	38	22	<0.0094		<0.25	6.49[g]	0.30	0.990
BB2BC205(A,B,C,D)	11/07/12	-	-	-	-	-	-	-	-	8.37	-	-
BB2BC206(A,B,C,D)	11/07/12	-	-	-	-	-	-	-	-	8.13	-	-
BB2BC207(A,B,C,D)	11/07/12	-	-	-	-	-	-	-	-	8.80	-	-
BB2BC208(A,B,C,D)	11/07/12	-	-	-	-	-	-	-	-	8.57	-	-
BB2BC209	11/15/12	-	-	-	-	-	-	-	-	8.6	-	-
BB2BC210	11/15/12	-	-	-	-	-	-	-	-	9.1	-	-

Notes:

(a) mg/kg = milligrams per kilogram
(b) WET = Waste Extraction Test
(c) SAR = Sodium Adsorption Ratio
(d) mg/l = milligrams per liter
(d) ppth = Parts per thousand
(f) < = Not detected above reporting limit.
(g) Laboratory reports sample was prepped or analyzed beyond specified holding time.

Figures

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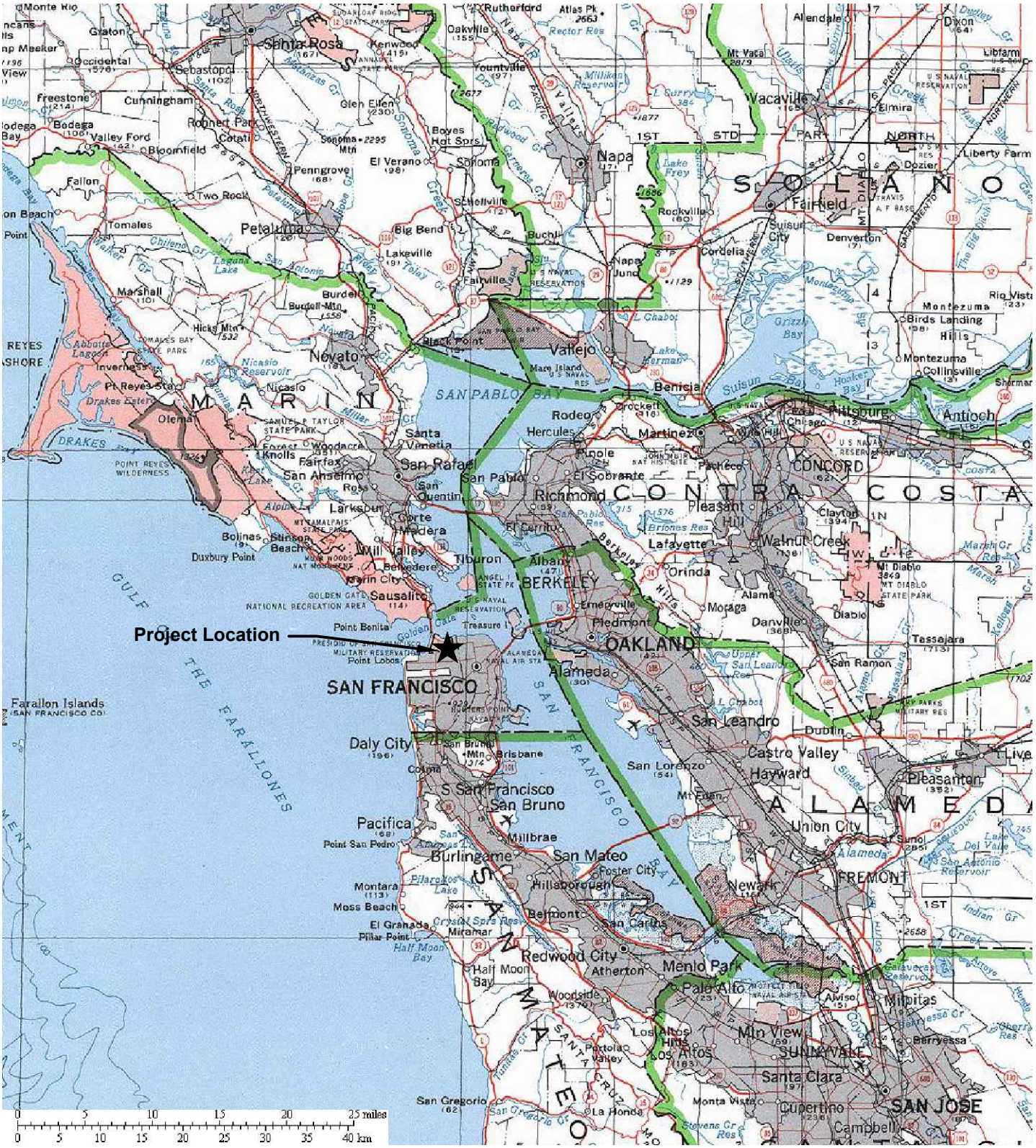

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Site Vicinity Map

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March 2014

Figure 1

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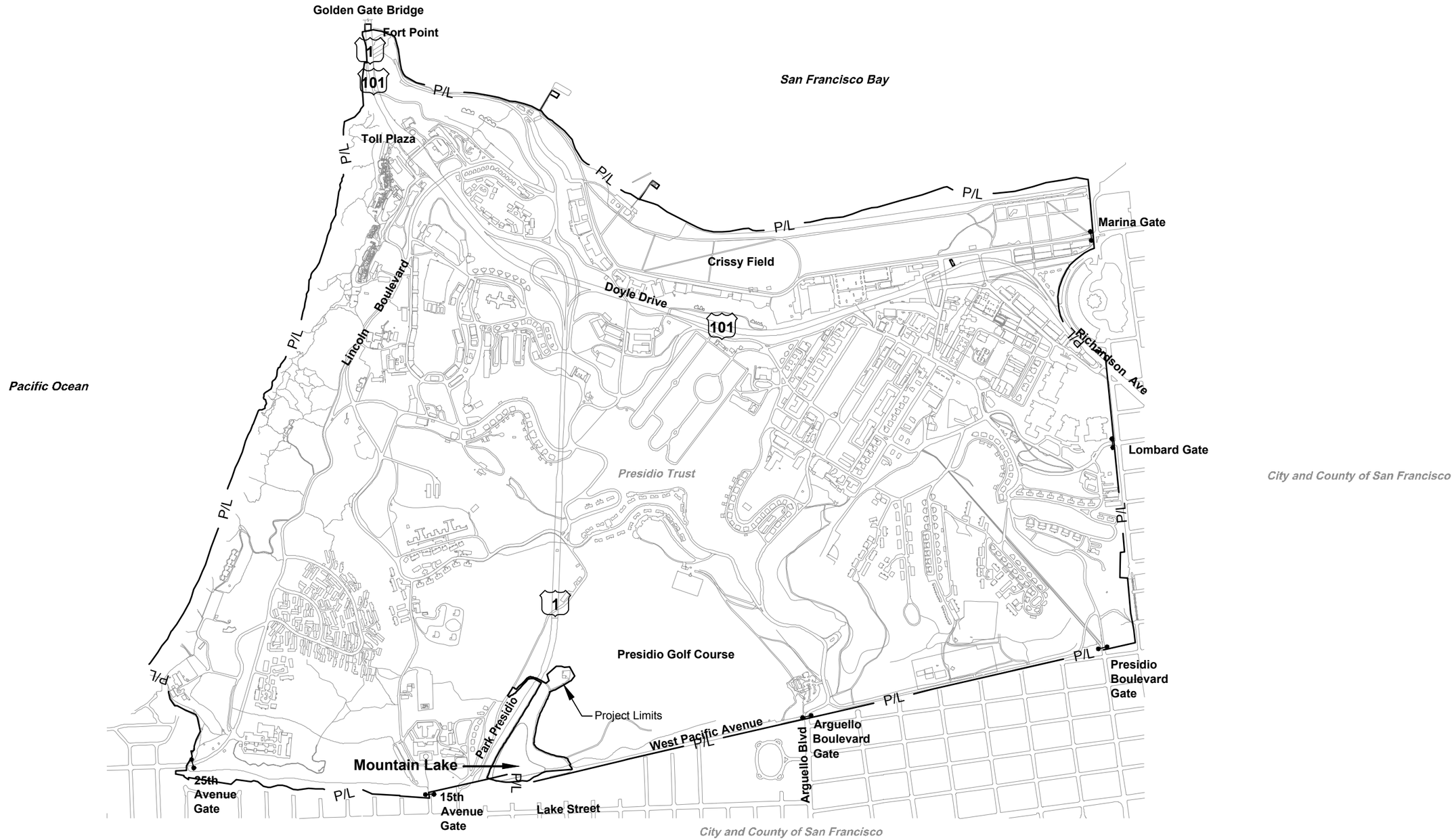

Source: Background map provided by the National Park Service Denver Service Center <http://cadd.den.nps.gov/sheets.html>

Legend

P/L Property Line

Presidio Gate

N

0 1250 2500

Approximate Scale: 1"=1250'

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San Francisco, California

Site Location Map

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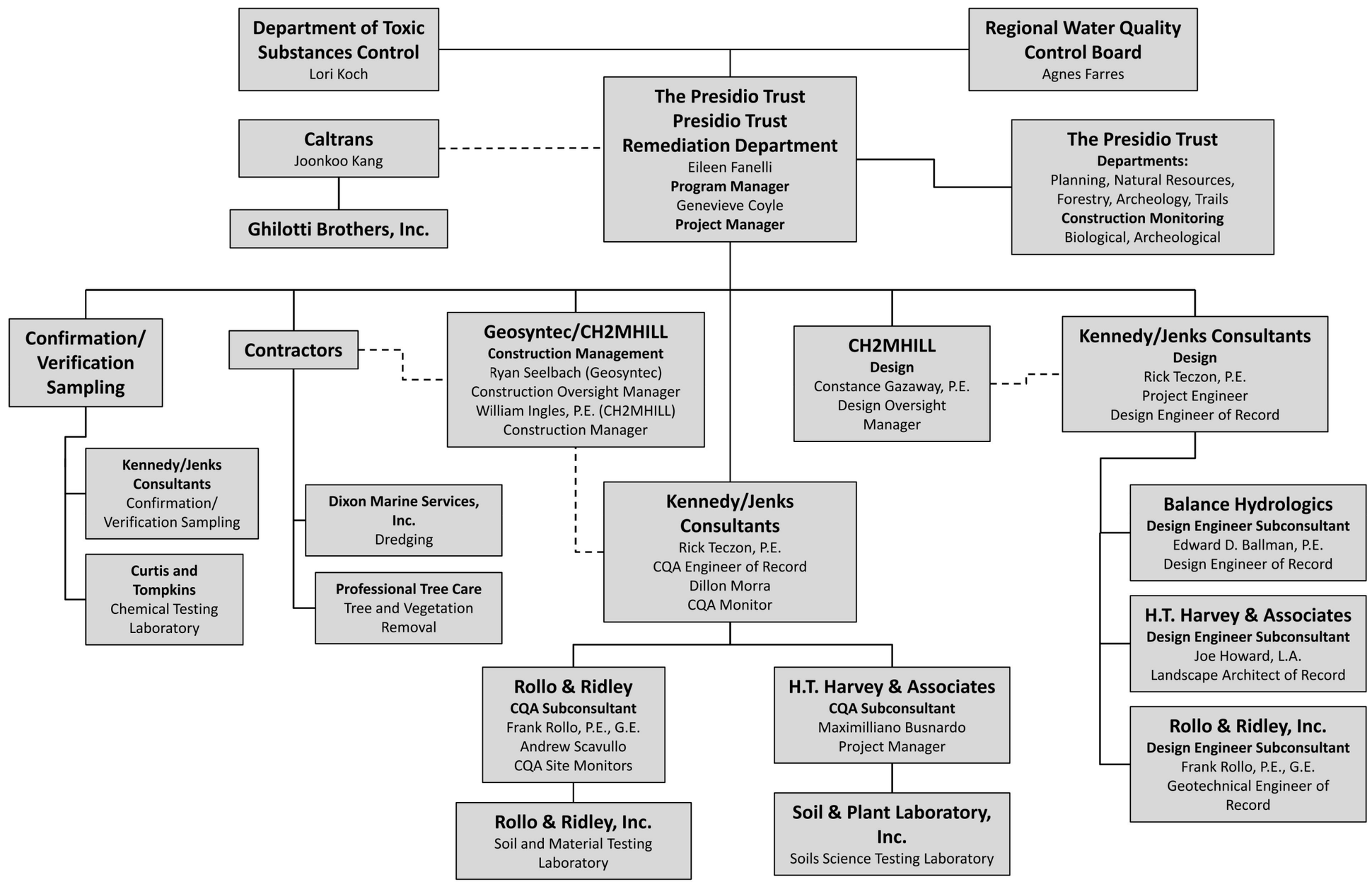
March 2014

Figure 2



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Organizational Chart

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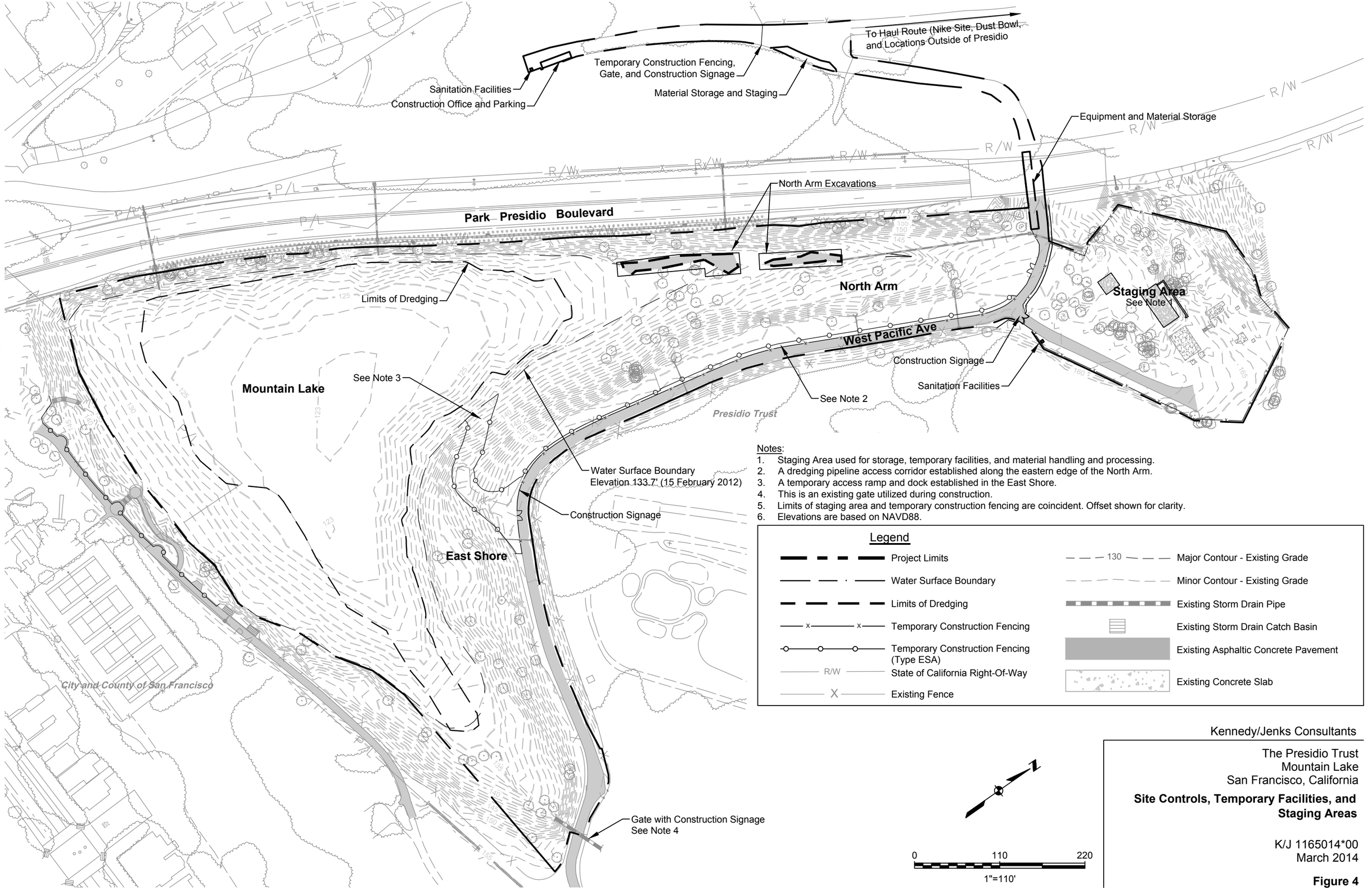
Figure 3



Notes:
1. Staging Area used for storage, temporary facilities, and material handling and processing.
2. A dredging pipeline access corridor established along the eastern edge of the North Arm.
3. A temporary access ramp and dock established in the East Shore.
4. This is an existing gate utilized during construction.
5. Limits of staging area and temporary construction fencing are coincident. Offset shown for clarity.
6. Elevations are based on NAVD88.

Legend

- Project Limits
- Water Surface Boundary
- Limits of Dredging
- Temporary Construction Fencing
- Temporary Construction Fencing (Type ESA)
- State of California Right-Of-Way
- Existing Fence
- Major Contour - Existing Grade
- Minor Contour - Existing Grade
- Existing Storm Drain Pipe
- Existing Storm Drain Catch Basin
- Existing Asphaltic Concrete Pavement
- Existing Concrete Slab

0 110 220
1"=110'

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Site Controls, Temporary Facilities, and Staging Areas

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March 2014

Figure 4

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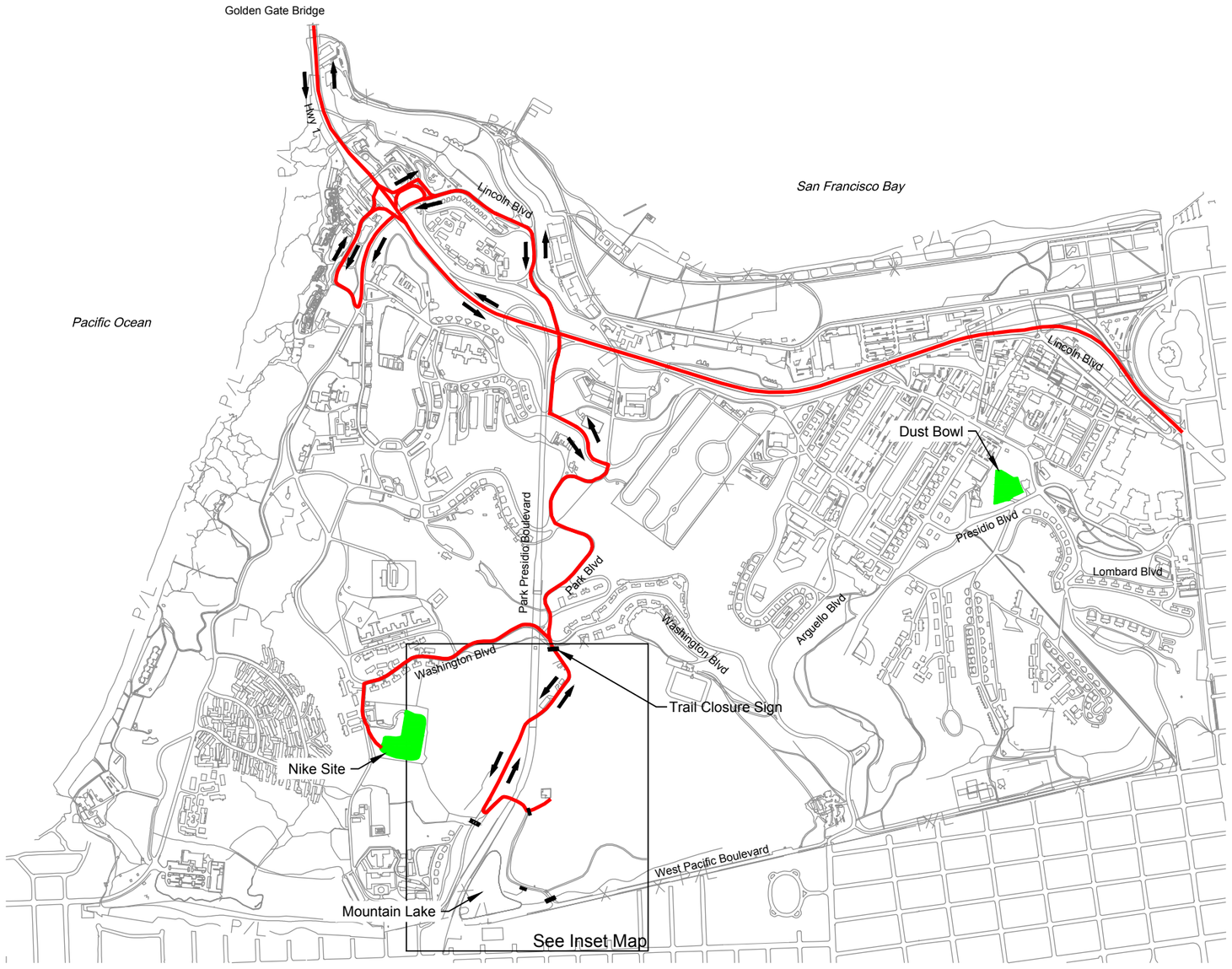

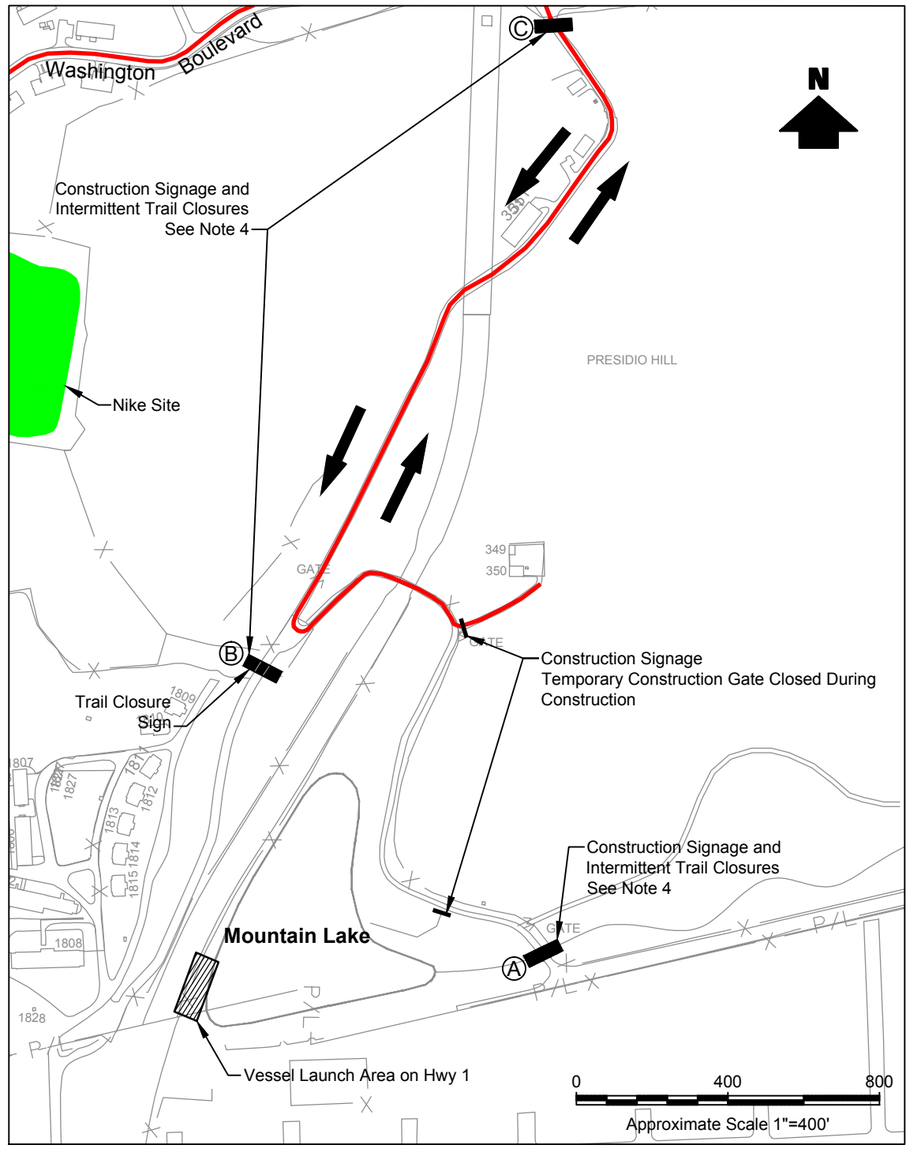

Inset Map
Scale: 1" = 400'

Legend

- Property Line (P/L)
- Primary Haul Route
- Secondary Haul Route
- Traffic Flow Direction
- Trail Closure Signage
- Vessel Launch Area on Hwy 1

Notes:
1. The Marina Blvd, Gorgas Ave, and Highway 1 toll plaza gates were available as alternatives for Presidio egress/ingress.
2. No entry or exit of project trucks into or out of the Presidio was allowed via Arguello Blvd, Presidio Blvd, 15th Ave, or 25th Ave.
3. Background map provided by the National Park Service Denver Service Center; see <http://cadd.den.nps.gov/sheets.html>.
4. Intermittent trail closures were enforced during material trucking operations on Park Boulevard between access control gates located at A, B, and C as shown on the map.

N

0 1250 2500
Approximate Scale: 1"=1250'

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Traffic Controls and Haul Routes

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Figure 5

Presidio Trust

Park Presidio Boulevard

Bridge

State of CA ROW

North Arm

Existing Asphalt Removed
See note 2

Staging Area
See Note 1

Existing Power
See Note 3

Wetland Boundary

Limits of Dredging

West Pacific Avenue

Protect Existing Fiber
Optics Line and Markers

Clear and Grub Staging Area

Remove Existing Concrete Slabs and Structures
as Shown (Typical of All)

Mountain Lake

Water Surface Boundary
Elevation 133.7' (15 February 2012)

Clear and Grub 5' Wide Pipeline Access Corridor

Presidio Trust

Clear and Grub 3' Wide Pipeline Access Corridor

Clear and Grub East Shore Access

Remove Existing Wood and Wire Fence

East Shore

Salvage Wooden Benches (Typical of 3)

Notes:
1. Limits of staging area and temporary construction fencing are coincident. Offset shown for clarity.
2. ADA accessible access provided where dredging pipeline crossed beneath West Pacific Avenue.

LEGEND

- Project Limits
- Temporary Construction Fencing
- Water Surface Boundary
- Wetland Boundary
- Temporary Construction Fencing (Type ESA)
- State of California Right-Of-Way
- Existing Power
- Existing Fence
- Major Contour - Existing Grade
- Minor Contour - Existing Grade
- Existing Storm Drain Pipe
- Existing Water
- Existing Telephone
- Existing Storm Drain Catch Basin
- Existing Asphaltic Concrete Pavement
- Existing Concrete Slab
- Demolition
- Vegetation Removal
- Existing Tree To Be Removed

0 40 80 120
1"=80'

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Tree Removal, Clearing, Grubbing, and Demolition Areas

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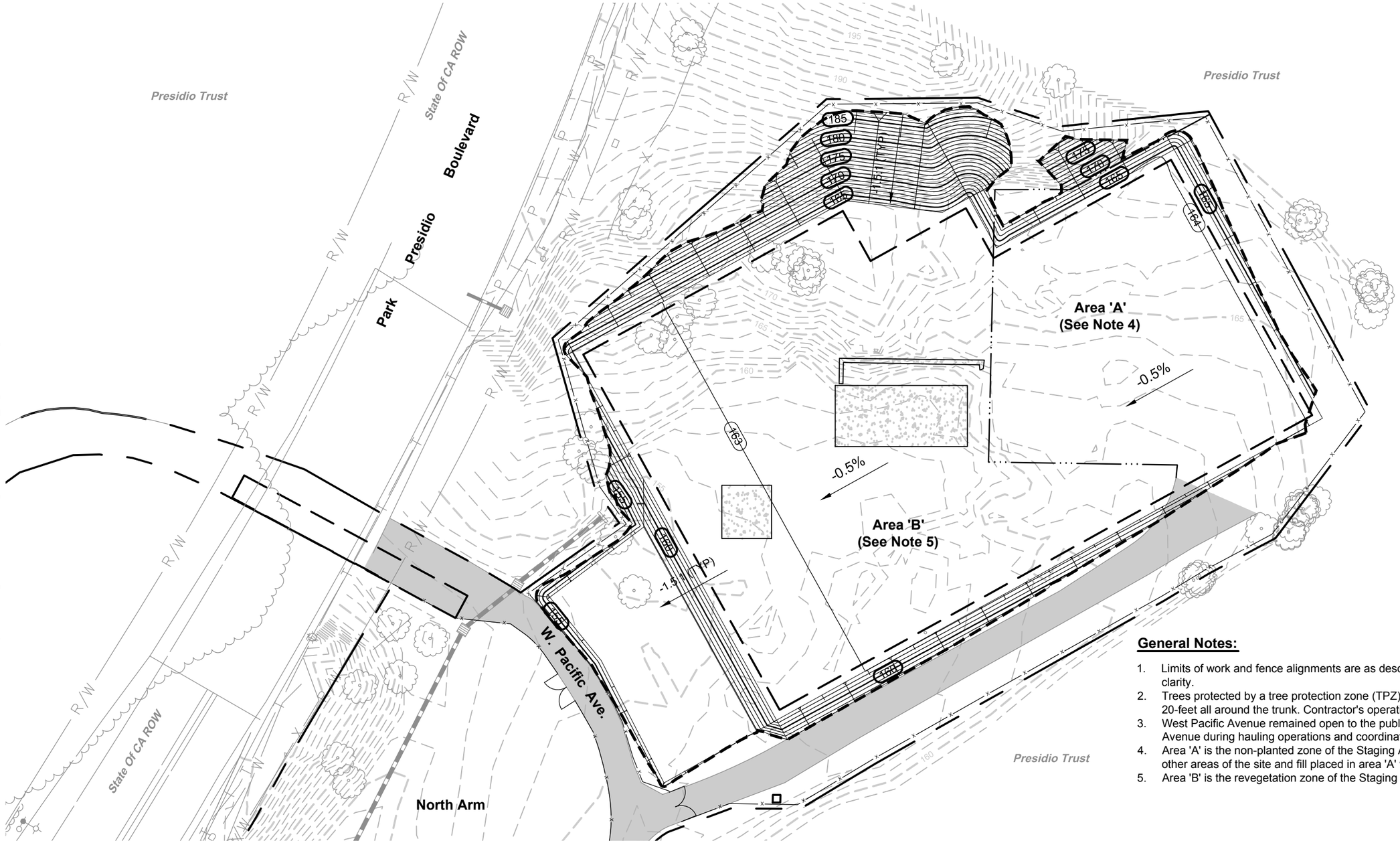
Figure 6



General Notes:

1. Limits of work and fence alignments are as described on the drawing. Offsets are for clarity.
2. Trees protected by a tree protection zone (TPZ) which is defined by the area within 20-feet all around the trunk. Contractor's operations were prohibited within the TPZ.
3. West Pacific Avenue remained open to the public. Contractor closed West Pacific Avenue during hauling operations and coordinated hauling operations with the Trust.
4. Area 'A' is the non-planted zone of the Staging Area. Soil from area 'A' placed as fill in other areas of the site and fill placed in area 'A' were segregated from existing soils.
5. Area 'B' is the revegetation zone of the Staging Area.

Legend

- Project Limits
- Temporary Construction Fencing
- Temporary Construction Fencing (Type ESA)
- State of California Right-Of-Way
- Existing Power
- Existing Fence
- Major Contour - Existing Grade
- Minor Contour - Existing Grade
- Existing Storm Drain Pipe
- Existing Water
- Existing Telephone
- Existing Storm Drain Catch Basin
- Existing Asphaltic Concrete Pavement
- Existing Concrete Slab

N

0 20 40

1"=40'

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Staging Area Grading Plan

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Figure 7

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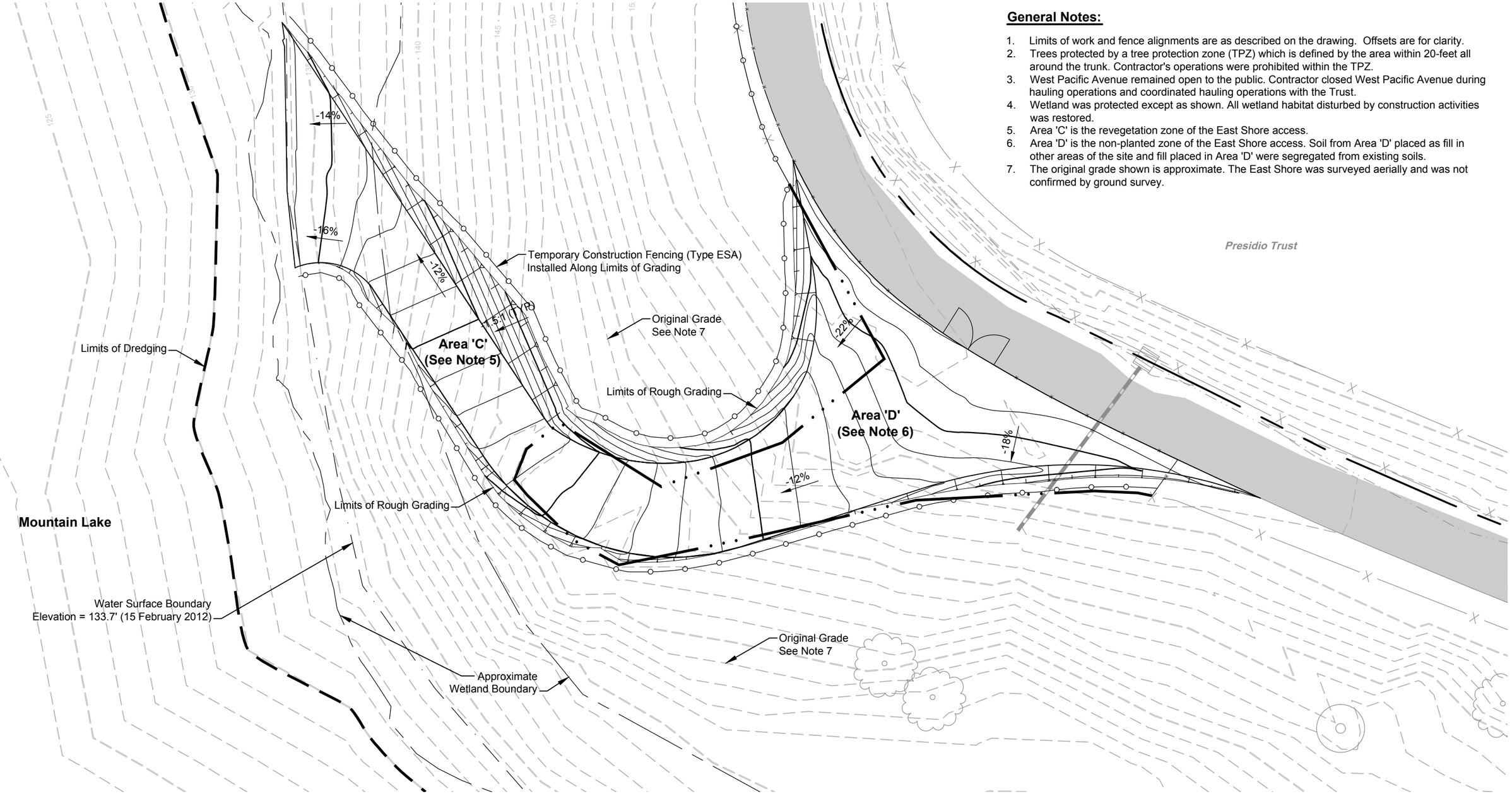
General Notes:

1. Limits of work and fence alignments are as described on the drawing. Offsets are for clarity.
2. Trees protected by a tree protection zone (TPZ) which is defined by the area within 20-feet all around the trunk. Contractor's operations were prohibited within the TPZ.
3. West Pacific Avenue remained open to the public. Contractor closed West Pacific Avenue during hauling operations and coordinated hauling operations with the Trust.
4. Wetland was protected except as shown. All wetland habitat disturbed by construction activities was restored.
5. Area 'C' is the revegetation zone of the East Shore access.
6. Area 'D' is the non-planted zone of the East Shore access. Soil from Area 'D' placed as fill in other areas of the site and fill placed in Area 'D' were segregated from existing soils.
7. The original grade shown is approximate. The East Shore was surveyed aerially and was not confirmed by ground survey.



Legend

- Project Limits
- Temporary Construction Fencing
- Temporary Construction Fencing (Type ESA)
- State of California Right-Of-Way
- Existing Power
- Existing Fence
- Major Contour - Existing Grade
- Minor Contour - Existing Grade
- Existing Storm Drain Pipe
- Existing Water
- Existing Telephone
- Existing Storm Drain Catch Basin
- Existing Asphaltic Concrete Pavement
- Existing Concrete Slab

N

0 10 20

1"=20'

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East Shore Access Grading Plan

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March 2014

Figure 8

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Park Presidio Boulevard

R/W

Limits of Dewatering Platform Grading

Limits of HDPE Liner

Limits of Work

Temporary Construction Fencing

Concrete Barrier (K-Rail)

4" Thick Concrete Slab

Slope To Drain (0.5%)

Water Treatment Plant

North Arm

Sediment Conditioning

Water Treatment Plant

Legend

- Existing Asphalt Pavement
- Water Treatment Plant Components
- Concrete Pad
- Limits of HDPE Liner

0 15 30

Scale: 1" = 30'

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Dewatering Platform Layout

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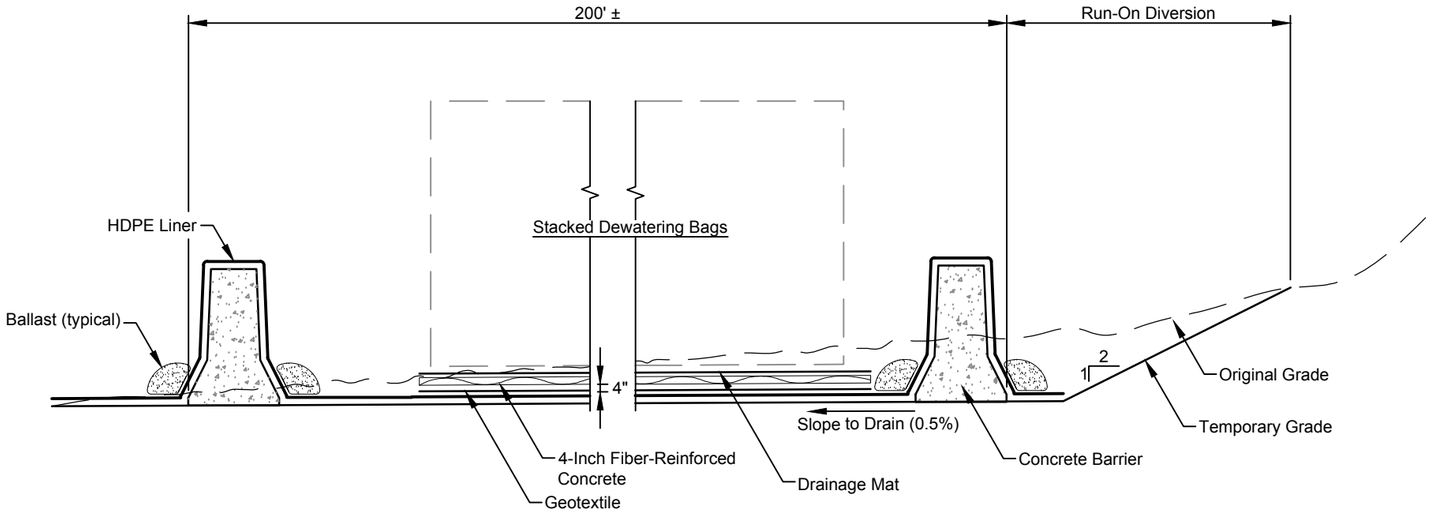
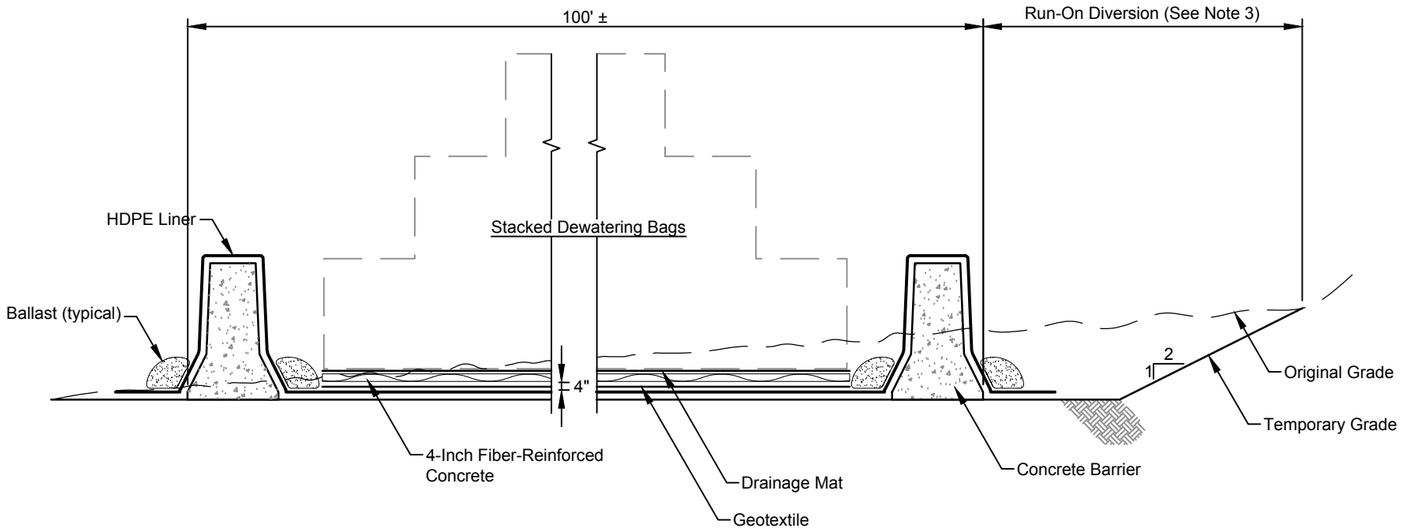
March 2014

Figure 9



Dewatering Platform Longitudinal Section



Dewatering Platform Cross Section

Notes:
1. Stack height and configuration of de-watering bags is schematic.
2. Drainage mat comprised of a non-woven geo-textile fabric.
3. Diversion swale along up-slope area to divert storm water run-on around the material handling area.

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Dewatering Platform Typical Detail

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March 2014

Figure 10

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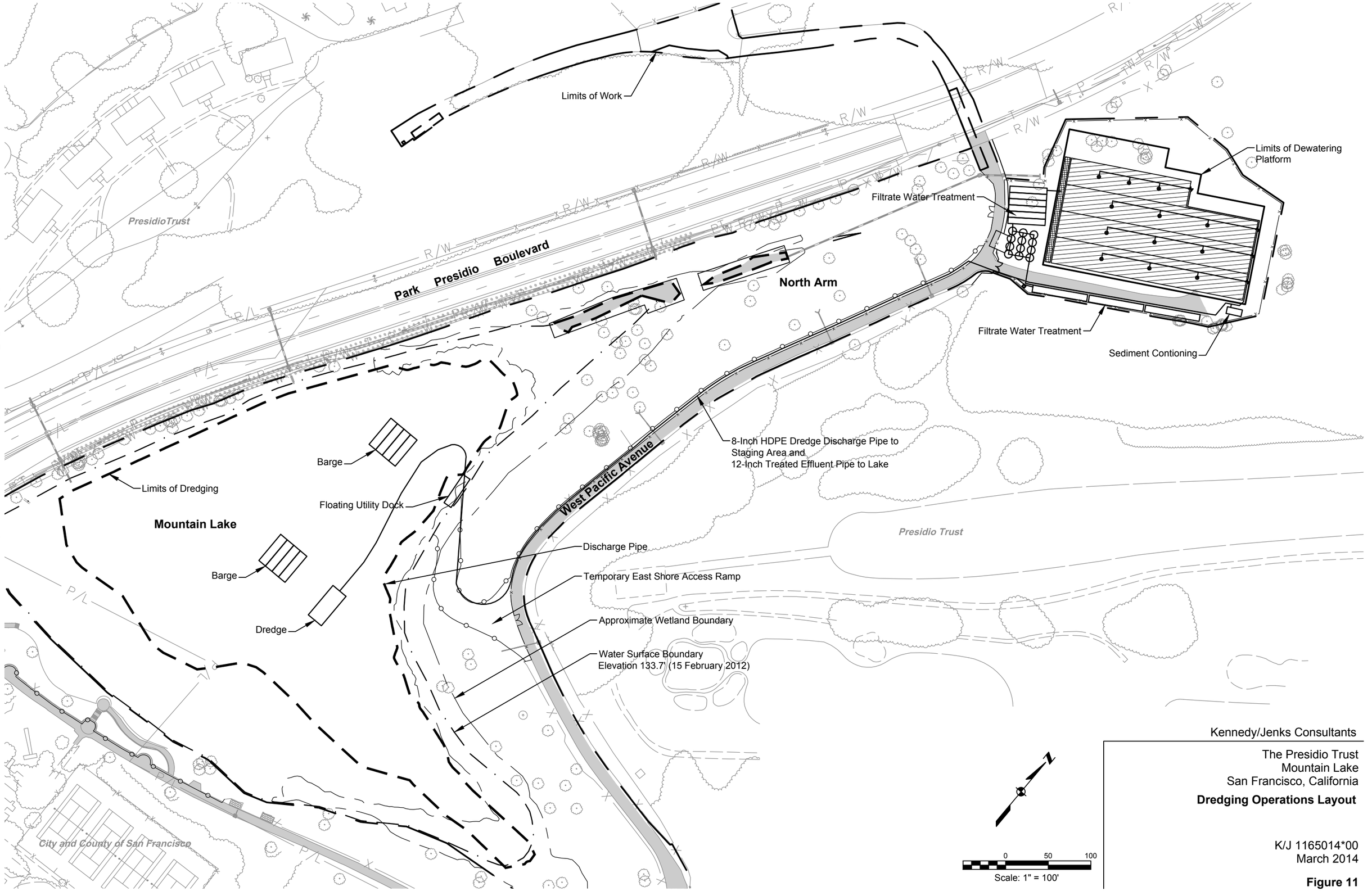

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Dredging Operations Layout

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March 2014

Figure 11

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1
Settling Tanks
2
Settling Tanks
3
Settling Tanks
Control Panel
Sand Filters
Bag Filters
Control Panel
Sand Filters
Bag Filters
Control Panel
Sand Filters
Bag Filters
Geotubes
Control Panel
Control Panel
Dredge
Return to Lake via Pipeline
Organo-Clay and GAC Units
Return to Lake via Pipeline
Organo-Clay and GAC Units
Return to Lake via Pipeline
Organo-Clay and GAC Units

Legend

- Ball Valve
- Check Valve
- Pump
- Submersible Pump
- Turbine Flow Meter
- Butterfly Valve
- Density Meter
- Electromagnetic Flow Meter
- 1 Treatment Train

Notes:
1. Three treatment trains, 1, 2, and 3.
2. Each treatment train capacity was 600-gpm.
3. Two treatment trains in operation, one treatment train in standby.

Source: Dixon Marine Services, Inc.

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Filtrate Water Treatment Process Flow Schematic

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March 2014

Figure 12

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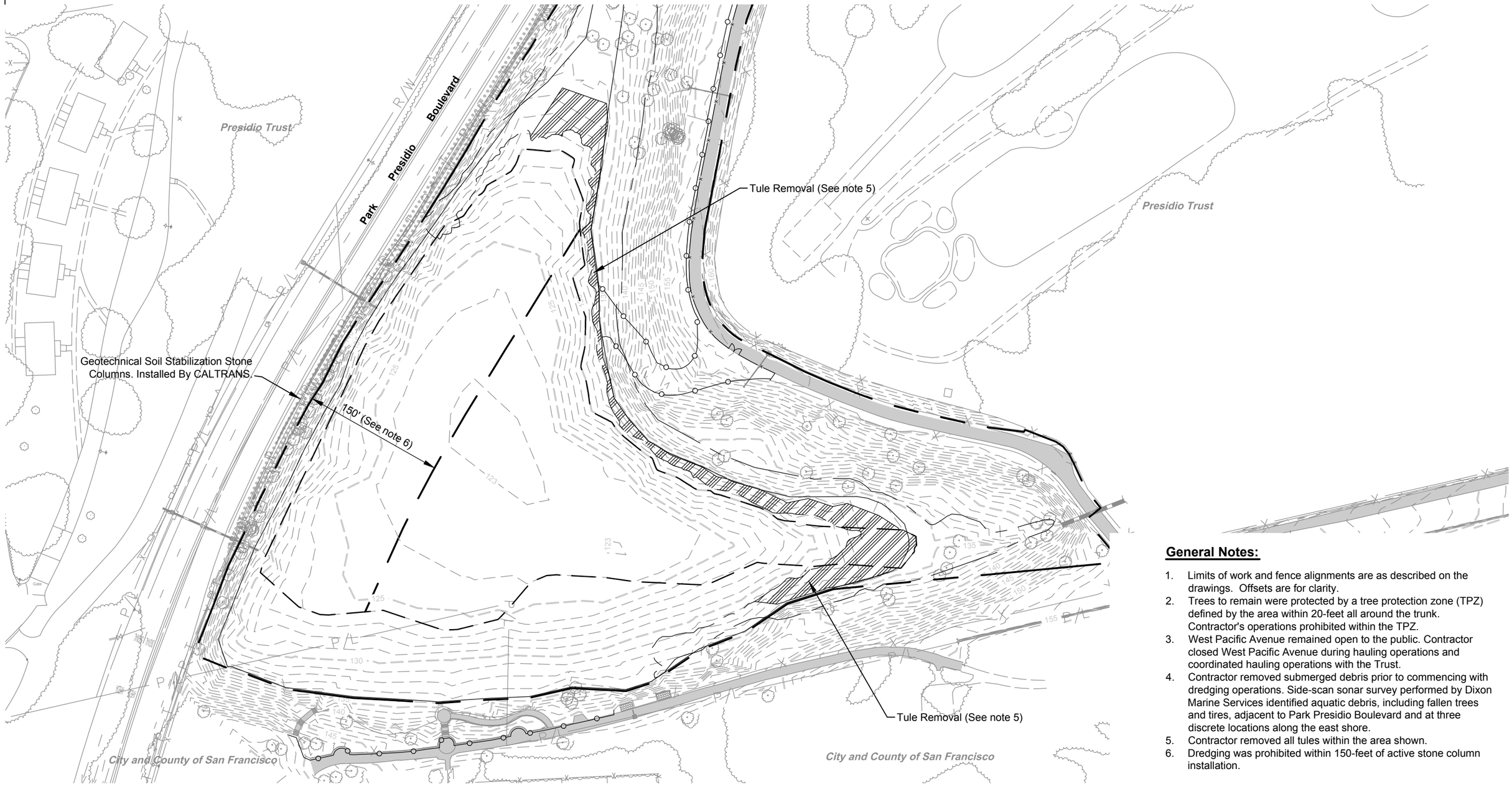

General Notes:

1. Limits of work and fence alignments are as described on the drawings. Offsets are for clarity.
2. Trees to remain were protected by a tree protection zone (TPZ) defined by the area within 20-feet all around the trunk. Contractor's operations prohibited within the TPZ.
3. West Pacific Avenue remained open to the public. Contractor closed West Pacific Avenue during hauling operations and coordinated hauling operations with the Trust.
4. Contractor removed submerged debris prior to commencing with dredging operations. Side-scan sonar survey performed by Dixon Marine Services identified aquatic debris, including fallen trees and tires, adjacent to Park Presidio Boulevard and at three discrete locations along the east shore.
5. Contractor removed all tules within the area shown.
6. Dredging was prohibited within 150-feet of active stone column installation.

- Project Limits
- Temporary Construction Fencing
- Temporary Construction Fencing (Type ESA)
- State of California Right-Of-Way
- Existing Power
- Existing Fence
- Major Contour - Existing Grade
- Minor Contour - Existing Grade
- Existing Storm Drain Pipe
- Existing Water
- Existing Telephone
- Existing Storm Drain Catch Basin
- Existing Asphaltic Concrete Pavement
- Existing Concrete Slab
- Tule Removal

N

0 50 100

APPROXIMATE SCALE IN FEET

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Aquatic Vegetation and Debris Removal Area

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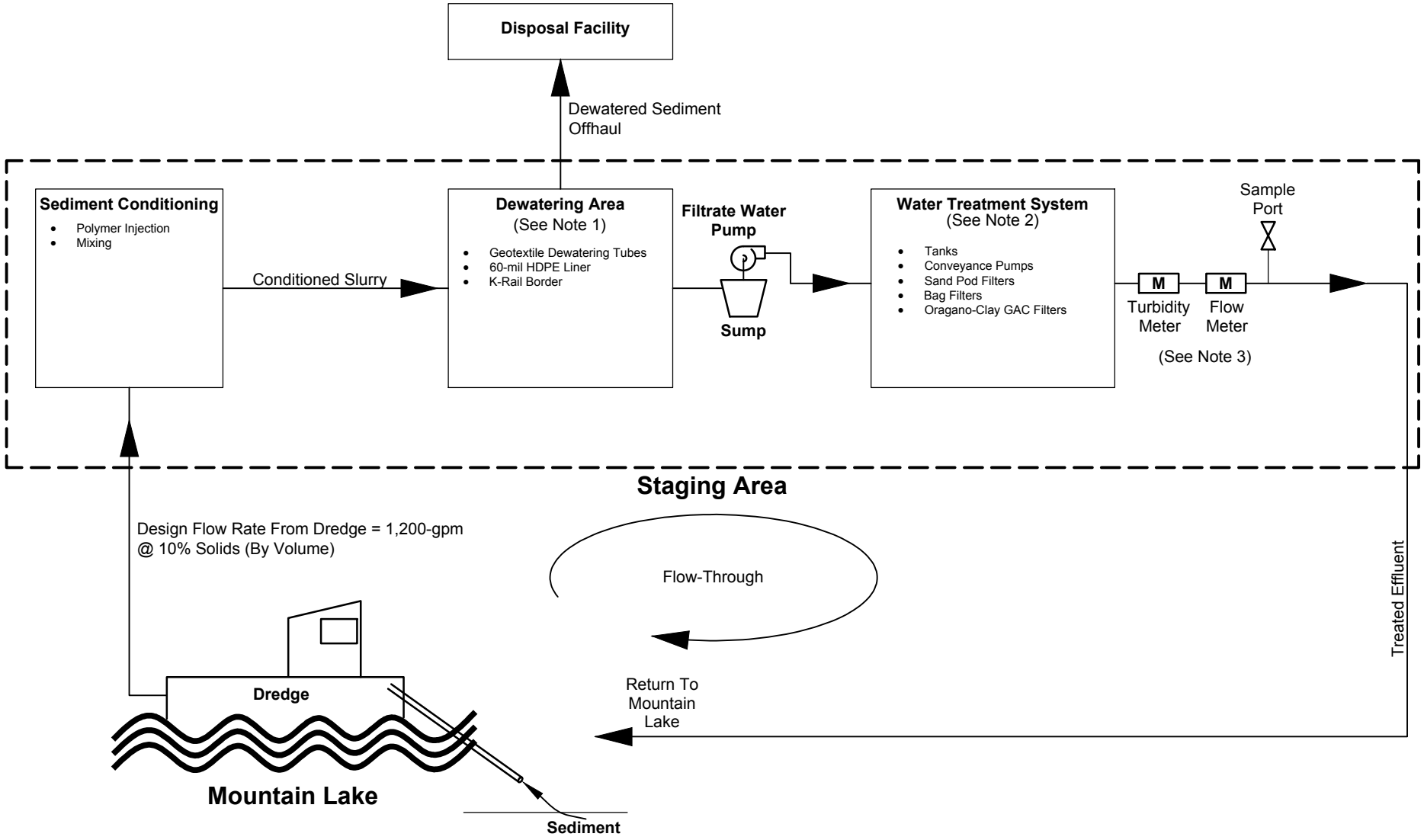
March 2014

Figure 13



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Notes:
1. See Figure 20 for additional details of sediment dewatering system.
2. See Figure 12 for additional details of water treatment system.
3. See text for additional details of water quality monitoring.

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Dredging Process Flow Schematic

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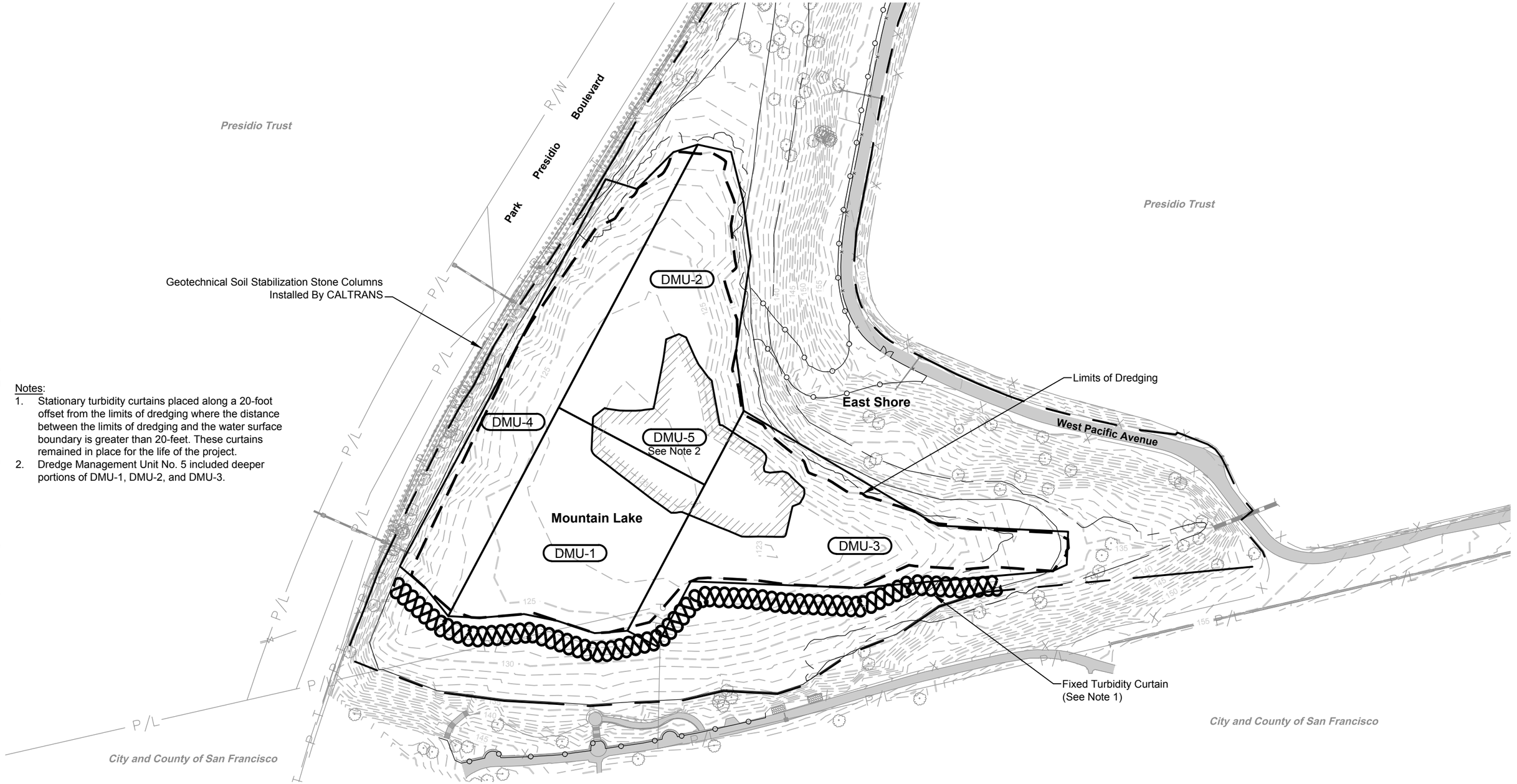
March 2014

Figure 14



Notes:
1. Stationary turbidity curtains placed along a 20-foot offset from the limits of dredging where the distance between the limits of dredging and the water surface boundary is greater than 20-feet. These curtains remained in place for the life of the project.
2. Dredge Management Unit No. 5 included deeper portions of DMU-1, DMU-2, and DMU-3.

Legend

- Project Limits
- Limits of Dredging
- X — Temporary Construction Fencing
- Temporary Construction Fencing (Type ESA)
- R/W — State of California Right-Of-Way
- P — Existing Power
- X — Existing Fence
- 130 — Major Contour - Existing Grade
- Minor Contour - Existing Grade
- Fixed Turbidity Curtain
- Mobile Turbidity Curtain
- Existing Storm Drain Pipe
- W — Existing Water
- T — Existing Telephone
- Existing Tree To Be Removed
- Existing Storm Drain Catch Basin
- Existing Asphaltic Concrete Pavement

N

0 50 100

Approximate Scale: 1" = 100'

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San Francisco, California

Dredge Management Units

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March 2014

Figure 15

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MLSE 25
MLSD 3
MLSE 17
MLSE 16
MLSE 1
MLSE 18
MLSD04
ML-1
MLSD 1
MLSE 31
MLSE 2
MLSE 4
MLSE 3
MLSE 32
MLSE 19
MLSE 6
MLSE 5
MLSE 7
ML-2
MLSE 37
MLSE 38
MLSD03
MLSE 34
MLSE 35
MLSE 36
Water Surface Boundary
EL 133.7' (15 February 2012)
MLSE 8
ML-4
MLSE 30
MLSE 15
MLSE 20
MLSE 14
MLSE 39
MLSD 2
MLSE 29
MLSE 21
MLSE 26
MLSE 10
MLSE 12
ML-3
ML-5
MLSE 13
MLSE 33
MSLE 40
MLSE 22
MLSE 28
MLSD01
MLSD02
MLSE 27
MLSE 11
MLSE 24
MLSE 102
MLSE 101
MLSE 23
MLSE 100
MLSE 103
MLSE 104
MLSE 105

LEGEND

- 2.5-Feet Dredge Depth
- 4.5-Feet Dredge Depth
- 5.5-Feet Dredge Depth
- 6.5-Feet Dredge Depth
- Dredge Limits
- City of San Francisco/Presidio Trust Property Line
- Lake Surface Boundary
- MLSE 28 — Chemical/Physical Sampling Location (2004)
- MLSE 11 — Sediment Sampling Location (2001)
- MLSE 104 — Sediment Sampling Location (2011)
- MLSD 1 — Storm Drain Inlet
- MLSE 35 — Archaeological Sampling Location (2004)
- ML-4 — EKI Composite Sediment Sample (1998)
- MLSD01 — Army Shallow Sediment Sampling Locations (1997)

Source: Survey by Towill Surveying, Mapping, and GIS Services between 15 December 2011 and 21 February 2012. Additional survey performed on 21 March 2012. Contour elevations below 133.5' were provided by the Trust and are from a bathymetric survey performed in 2003. Contour interval is one foot.

N

0 45 90 135

1"=90'

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Mountain Lake
San Francisco, California

Dredging Plan

K/J 1165014*00
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Figure 16

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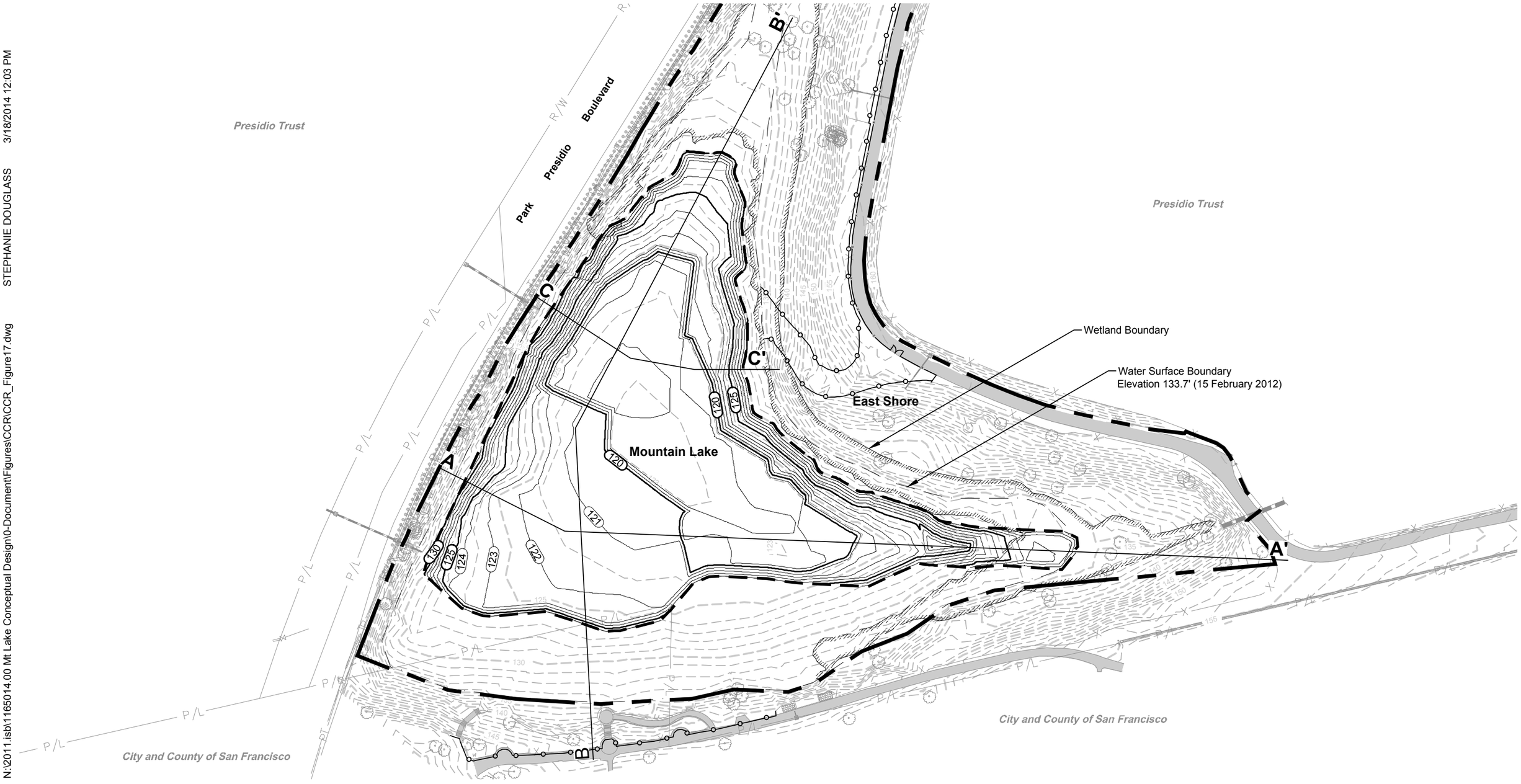

Legend

- Project Limits
- Temporary Construction Fencing
- Water Surface Boundary
- Wetland Boundary
- Temporary Construction Fencing (Type ESA)
- State of California Right-Of-Way
- Existing Power
- Existing Fence
- Major Contour - Existing Grade
- Minor Contour - Existing Grade
- Existing Storm Drain Pipe
- Existing Water
- Existing Telephone
- Existing Storm Drain Catch Basin
- Existing Asphaltic Concrete Pavement
- A A' Section Line

N

0 100 200

1"=100'

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San Francisco, California

Dredging Bathymetry

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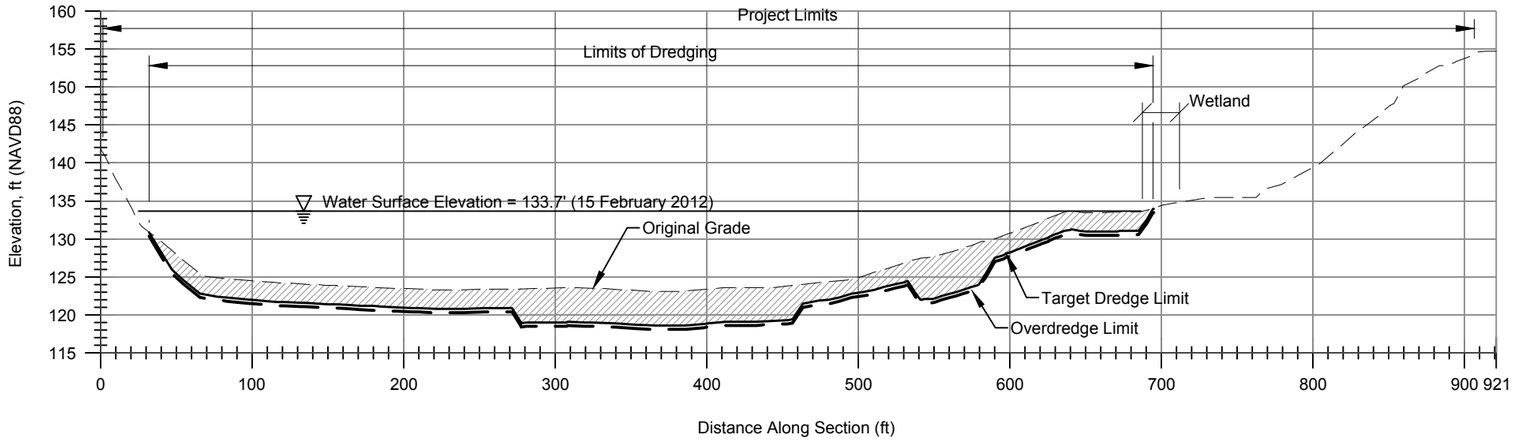
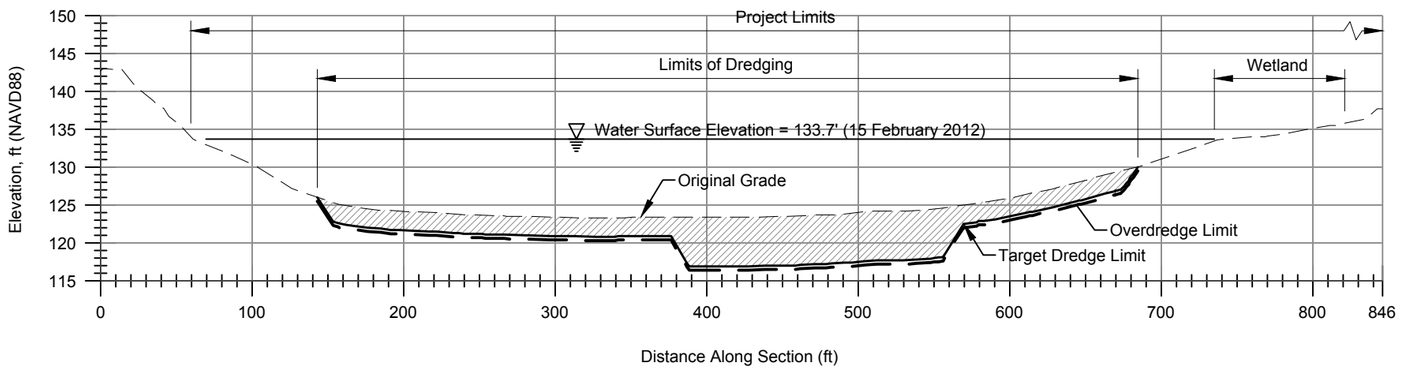
March 2014

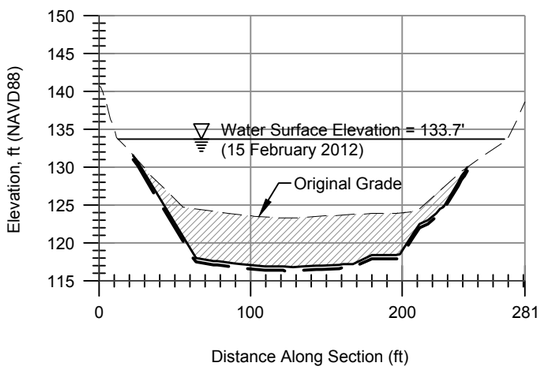
Figure 17



Section A-A'



Section B-B'



Section C-C'

Legend

- Cut
- Original Grade
- Overdredge Limit
- Target Dredge Limit

0 10 20 30
Vertical 1"=20'

0 100 200
1"=100'

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Dredging Cross Sections

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Figure 18

N:\2011.isb\1165014.00 Mt Lake Conceptual Design\10-Document\Figures\CCR\CCR_Figure18.dwg STEPHANIE DOUGLASS 3/18/2014 12:04 PM

N:\2011.isb\1165014.00 Mt Lake Conceptual Design\0-Document\Figures\CCR\CCR_Figure19.dwg CAMERON ROSS 3/19/2014 9:54 AM

Geotube Layout		
ID	Length (feet)	Diameter (feet)
1-A	143	75
2-A	229	75
3-A	229	75
4-A	229	75
1-B	129	80
2-B	214	80
3-B	214	80
1-C	114	85
2-C	200	85

Notes:

1. Source: Dixon Marine Services, Inc.
2. Dredging was performed in two batches. This bag configuration was used for both batches.

Legend

- Project Limits
- Temporary Construction Fencing
- Temporary Construction Fencing (Type ESA)
- State of California Right-Of-Way
- Existing Power
- Existing Fence
- Major Contour - Existing Grade
- Minor Contour - Existing Grade
- Existing Storm Drain Pipe
- Existing Water
- Existing Telephone
- Existing Storm Drain Catch Basin
- Existing Asphaltic Concrete Pavement

0 20 40

1"=40'

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San Francisco, California

Geotextile Dewatering Tube Layout

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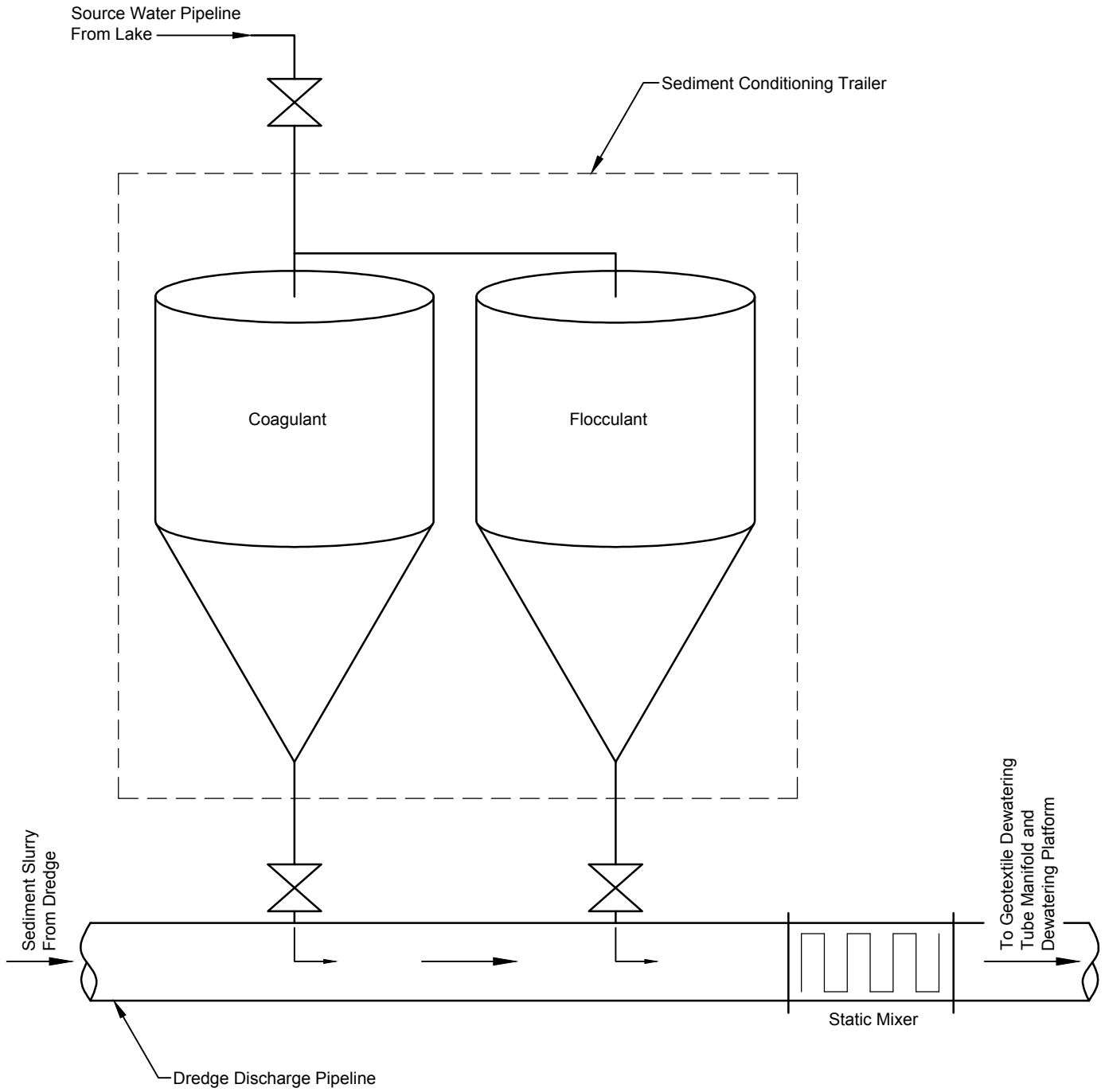
Figure 19



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Sediment Conditioning and Dewatering Process Flow Schematic

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March 2014

Figure 20

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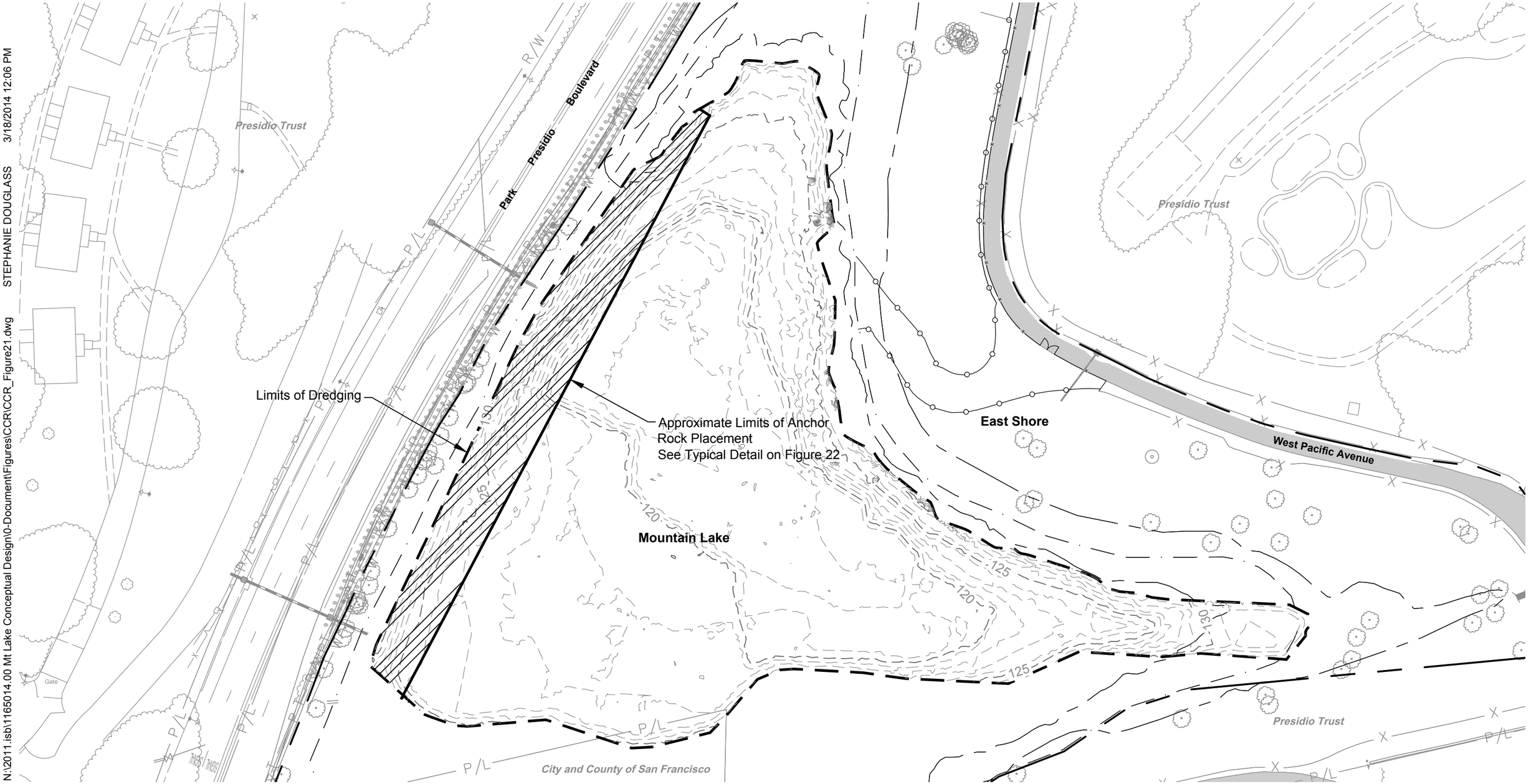

Legend

- Project Limits
- Temporary Construction Fencing
- Temporary Construction Fencing (Type ESA)
- State of California Right-Of-Way
- Existing Power
- Existing Fence
- Major Contour - Dredged Bathymetry
- Minor Contour - Dredged Bathymetry
- Existing Storm Drain Pipe
- Existing Water
- Existing Telephone
- Existing Storm Drain Catch Basin
- Existing Asphaltic Concrete Pavement
- Approximate Limits of Anchor Rock Placement

N

0 35 70

Approximate Scale In Feet

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Anchor Rock Area

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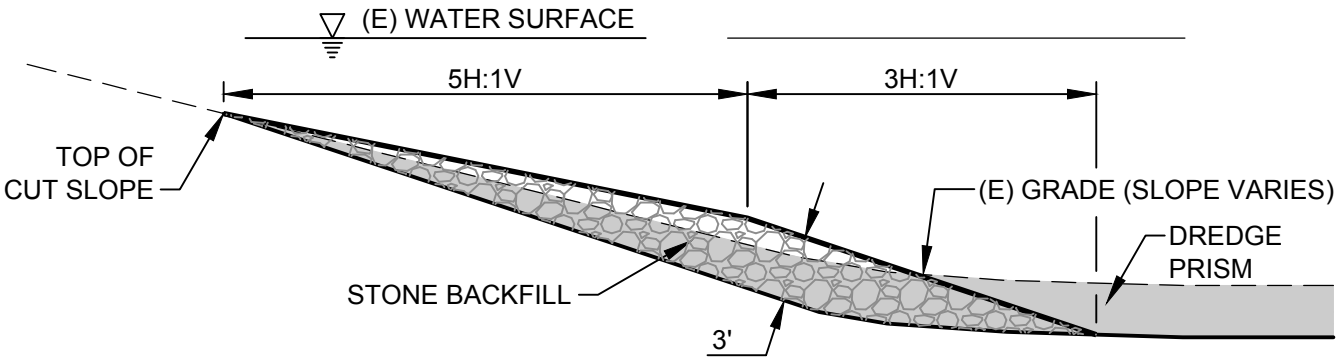
Figure 21



Notes:
1. Rip-Rap backfill consisted of 200-lb minus stone.
2. Drawing not to scale.

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Anchor Rock Typical Detail

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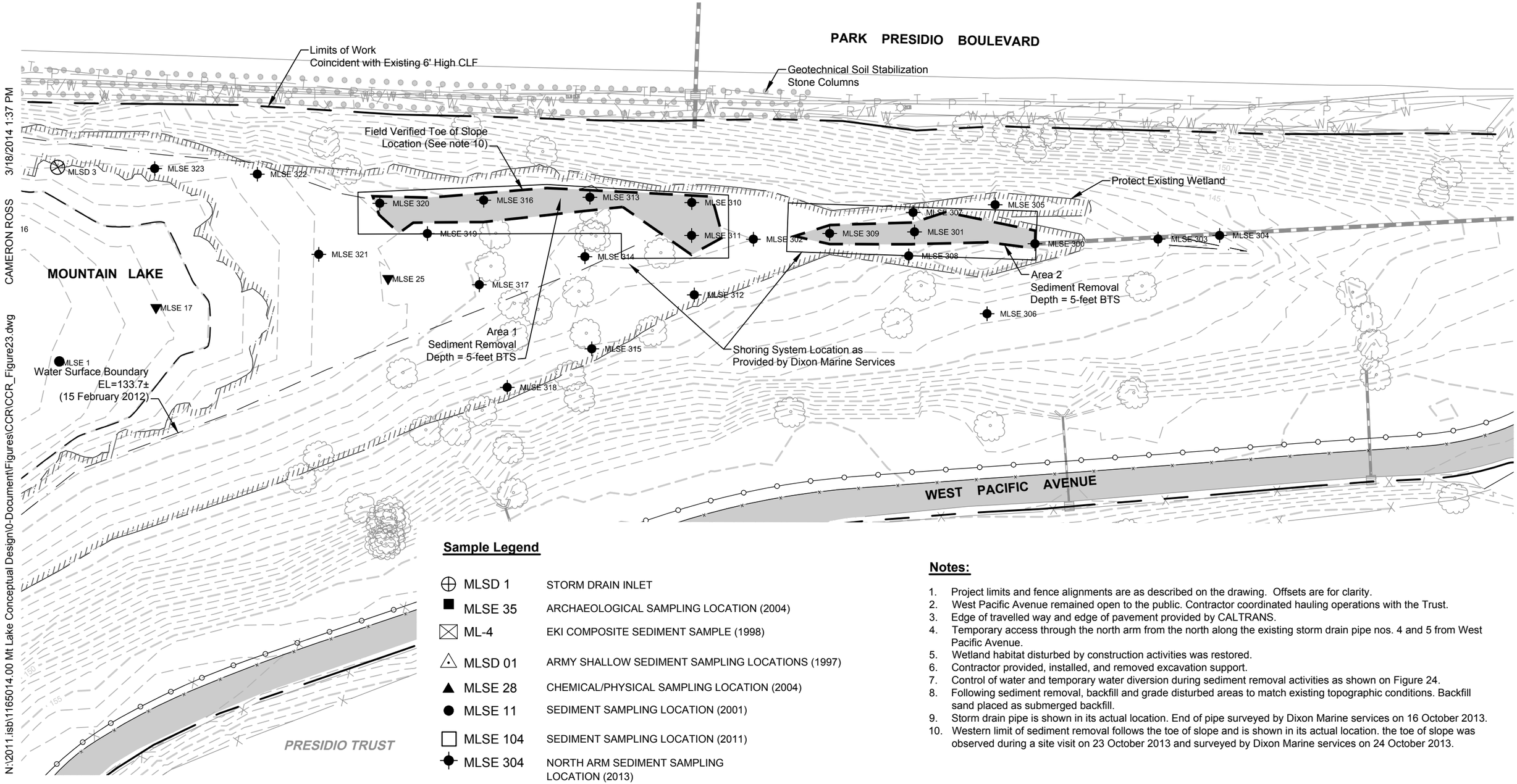
Figure 22



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Sample Legend

MLSD 1	STORM DRAIN INLET
MLSE 35	ARCHAEOLOGICAL SAMPLING LOCATION (2004)
ML-4	EKI COMPOSITE SEDIMENT SAMPLE (1998)
MLSD 01	ARMY SHALLOW SEDIMENT SAMPLING LOCATIONS (1997)
MLSE 28	CHEMICAL/PHYSICAL SAMPLING LOCATION (2004)
MLSE 11	SEDIMENT SAMPLING LOCATION (2001)
MLSE 104	SEDIMENT SAMPLING LOCATION (2011)
MLSE 304	NORTH ARM SEDIMENT SAMPLING LOCATION (2013)

Notes:

1. Project limits and fence alignments are as described on the drawing. Offsets are for clarity.
2. West Pacific Avenue remained open to the public. Contractor coordinated hauling operations with the Trust.
3. Edge of travelled way and edge of pavement provided by CALTRANS.
4. Temporary access through the north arm from the north along the existing storm drain pipe nos. 4 and 5 from West Pacific Avenue.
5. Wetland habitat disturbed by construction activities was restored.
6. Contractor provided, installed, and removed excavation support.
7. Control of water and temporary water diversion during sediment removal activities as shown on Figure 24.
8. Following sediment removal, backfill and grade disturbed areas to match existing topographic conditions. Backfill sand placed as submerged backfill.
9. Storm drain pipe is shown in its actual location. End of pipe surveyed by Dixon Marine services on 16 October 2013.
10. Western limit of sediment removal follows the toe of slope and is shown in its actual location. the toe of slope was observed during a site visit on 23 October 2013 and surveyed by Dixon Marine services on 24 October 2013.

Legend

- Project Limits
- Temporary Construction Fencing
- Temporary Construction Fencing (Type ESA)
- State of California Right-Of-Way (R/W)
- Existing Power (P)
- Existing Fence (X)
- Major Contour - Existing Grade (130)
- Minor Contour - Existing Grade
- Existing Storm Drain Pipe
- Existing Water (W)
- Existing Telephone (T)
- Existing Storm Drain Catch Basin
- Existing Asphaltic Concrete Pavement
- Sediment Removal
- Mapped Wetland Boundary

0 20 40
APPROXIMATE SCALE IN FEET

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Mountain Lake
San Francisco, California

North Arm Sediment Removal Plan

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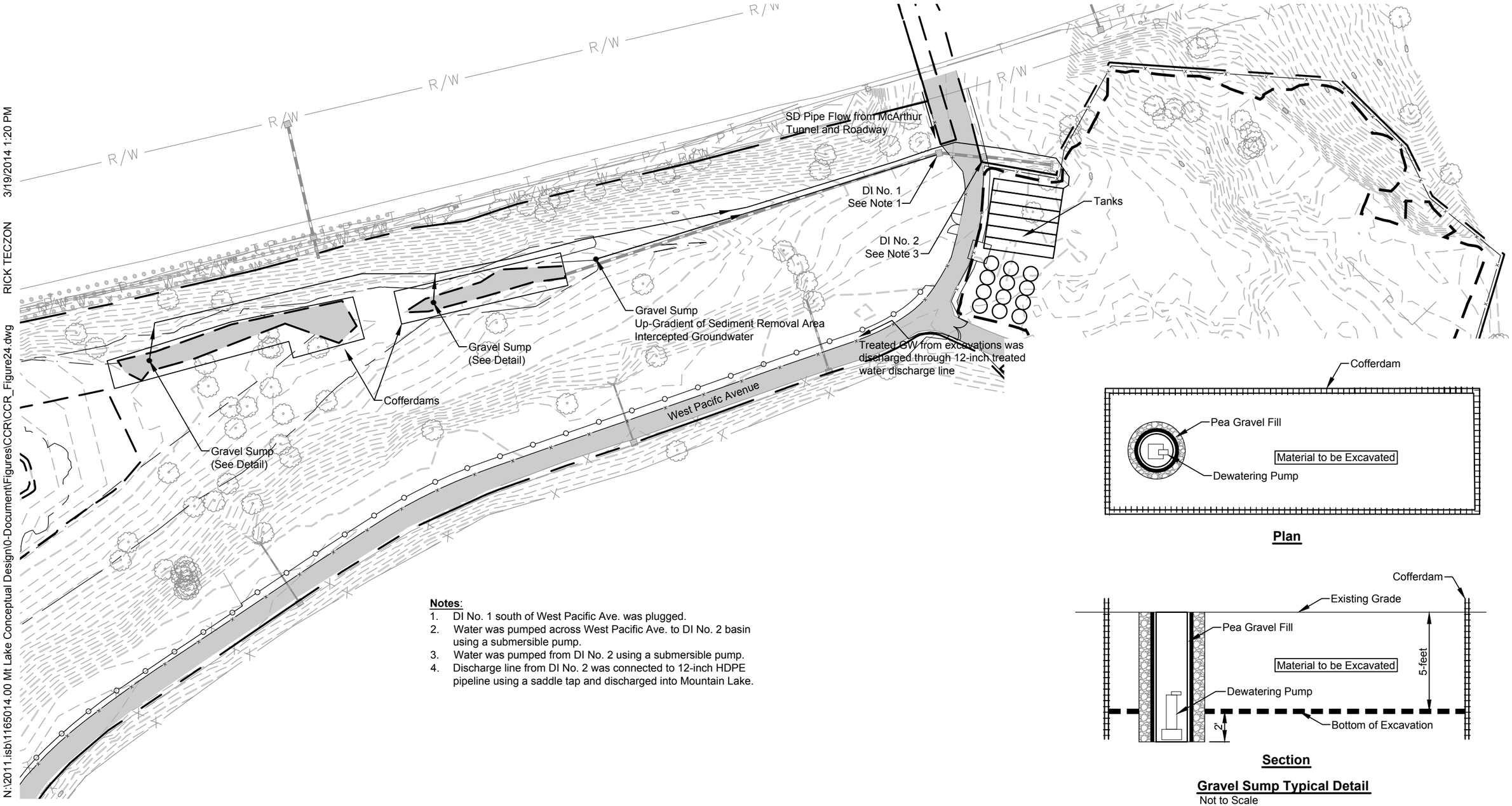
March 2014

Figure 23



Notes:
1. DI No. 1 south of West Pacific Ave. was plugged.
2. Water was pumped across West Pacific Ave. to DI No. 2 basin using a submersible pump.
3. Water was pumped from DI No. 2 using a submersible pump.
4. Discharge line from DI No. 2 was connected to 12-inch HDPE pipeline using a saddle tap and discharged into Mountain Lake.

Plan

Section

Gravel Sump Typical Detail
Not to Scale

Legend

- Project Limits
- Water Surface Boundary
- Limits of Dredging
- Temporary Construction Fencing
- Temporary Construction Fencing (Type ESA)
- 130 — Major Contour - Existing Grade
- Minor Contour - Existing Grade
- Existing Storm Drain Pipe
- Existing Storm Drain Catch Basin
- R/W — State of California Right-Of-Way
- X — Existing Fence
- Existing Asphaltic Concrete Pavement
- Existing Concrete Slab

0 50 100
APPROXIMATE SCALE IN FEET

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San Francisco, California

North Arm Water Management Plan

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Figure 24

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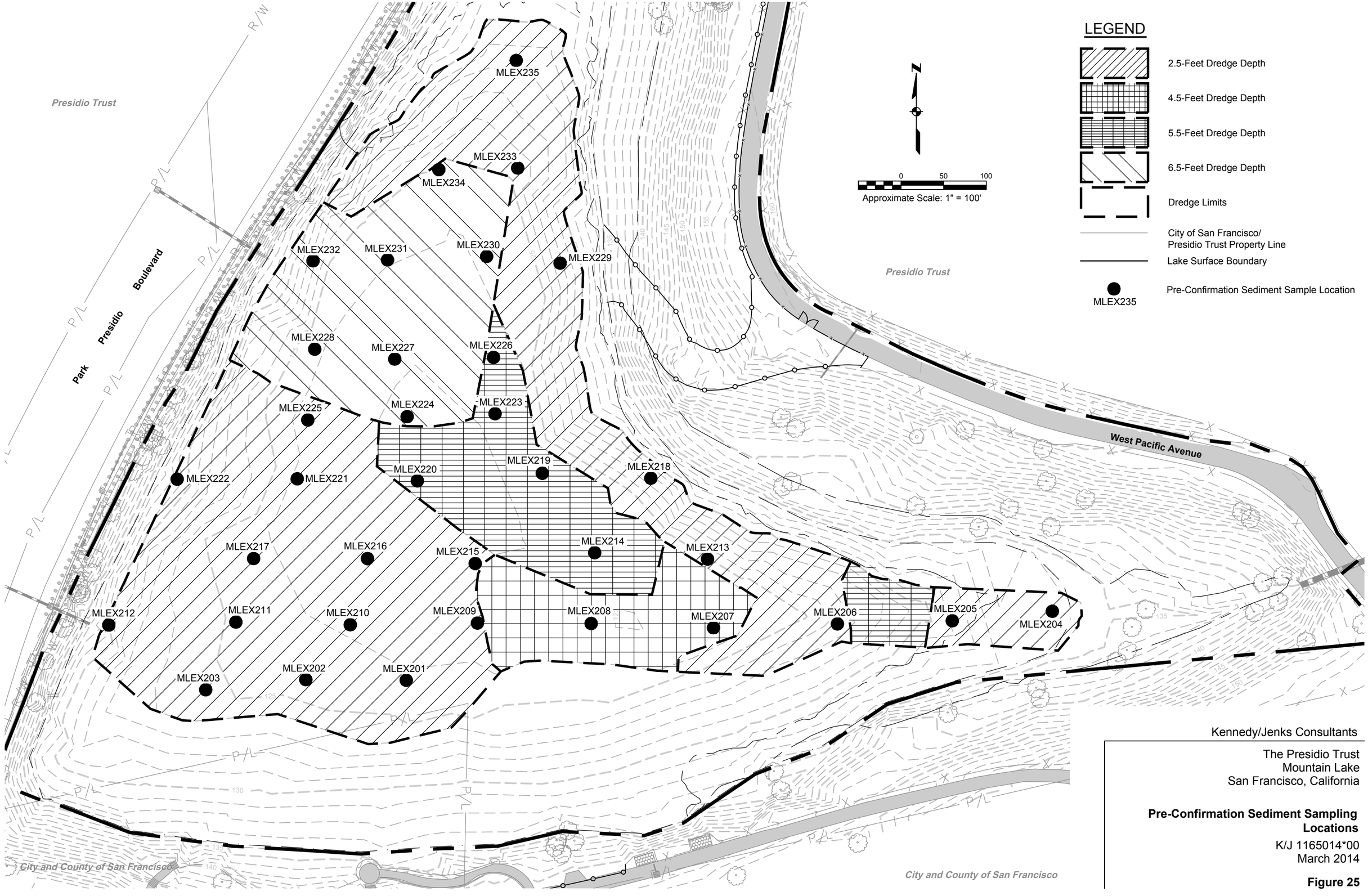

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San Francisco, California

Pre-Confirmation Sediment Sampling Locations

K/J 1165014*00
March 2014

Figure 25

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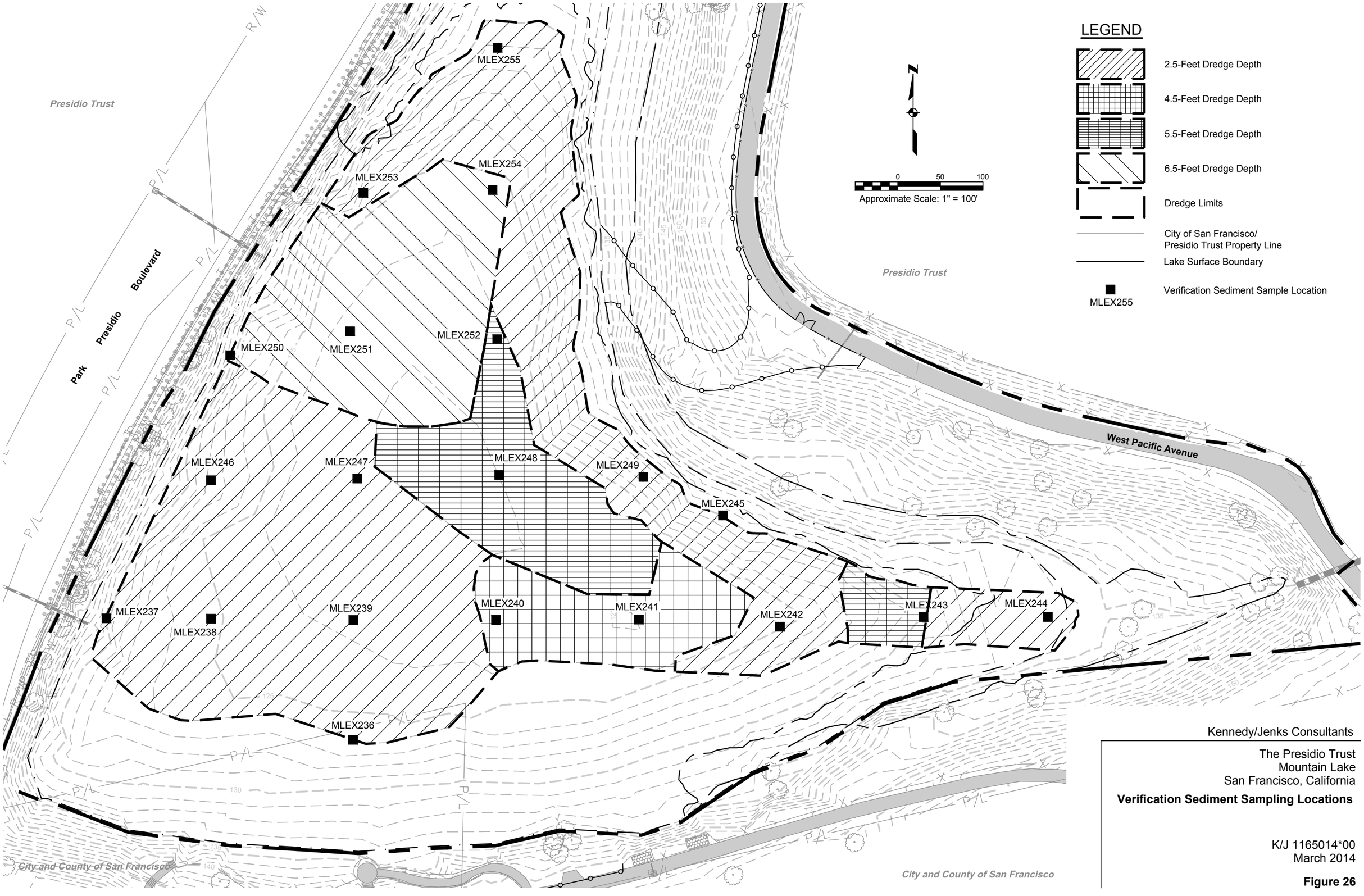

LEGEND

- 2.5-Feet Dredge Depth
- 4.5-Feet Dredge Depth
- 5.5-Feet Dredge Depth
- 6.5-Feet Dredge Depth
- Dredge Limits
- City of San Francisco/ Presidio Trust Property Line
- Lake Surface Boundary
- MLEX255 — Verification Sediment Sample Location

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San Francisco, California

Verification Sediment Sampling Locations

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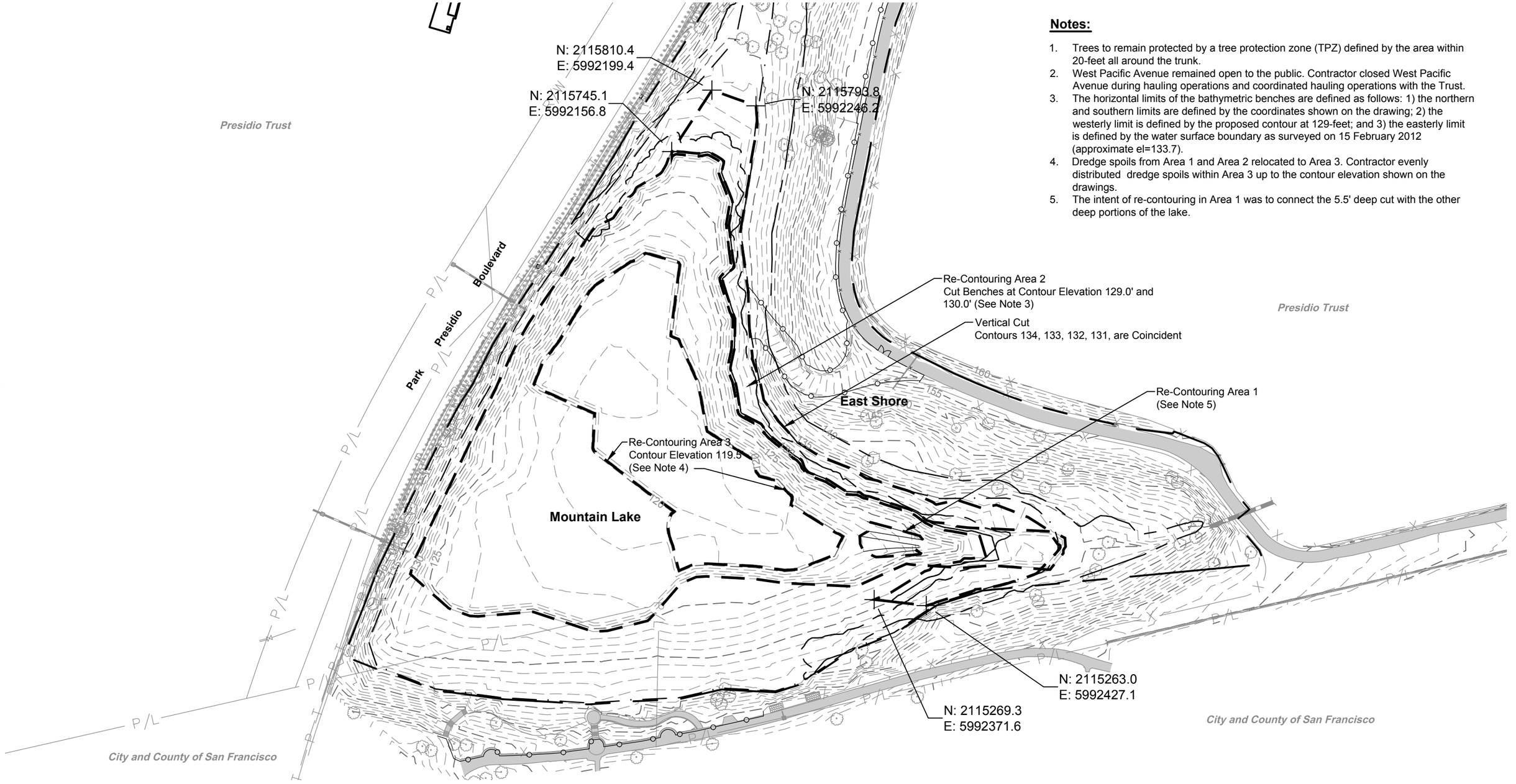
Figure 26

N:\2011.isb\1165014.00 Mt Lake Conceptual Design\0-Document\Figures\CCR\CCR_Figure27.dwg 3/18/2014 12:12 PM STEPHANIE DOUGLASS

Notes:

1. Trees to remain protected by a tree protection zone (TPZ) defined by the area within 20-feet all around the trunk.
2. West Pacific Avenue remained open to the public. Contractor closed West Pacific Avenue during hauling operations and coordinated hauling operations with the Trust.
3. The horizontal limits of the bathymetric benches are defined as follows: 1) the northern and southern limits are defined by the coordinates shown on the drawing; 2) the westerly limit is defined by the proposed contour at 129-feet; and 3) the easterly limit is defined by the water surface boundary as surveyed on 15 February 2012 (approximate el=133.7).
4. Dredge spoils from Area 1 and Area 2 relocated to Area 3. Contractor evenly distributed dredge spoils within Area 3 up to the contour elevation shown on the drawings.
5. The intent of re-contouring in Area 1 was to connect the 5.5' deep cut with the other deep portions of the lake.



Legend

- Project Limits
- Limits of Dredging
- Temporary Construction Fencing
- Temporary Construction Fencing (Type ESA)
- State of California Right-Of-Way
- Existing Power
- Existing Fence
- Major Contour - Existing Grade
- Minor Contour - Existing Grade
- Existing Storm Drain Pipe
- Existing Water
- Existing Telephone
- Existing Tree To Be Removed
- Existing Storm Drain Catch Basin
- Existing Asphaltic Concrete Pavement
- Geotechnical Soil Stabilization Stone Columns
- Major Contour - Finish Grade
- Minor Contour - Finish Grade

N

0 50 100

Approximate Scale: 1" = 100'

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Mountain Lake
San Francisco, California

Bathymetric Re-Contouring Plan

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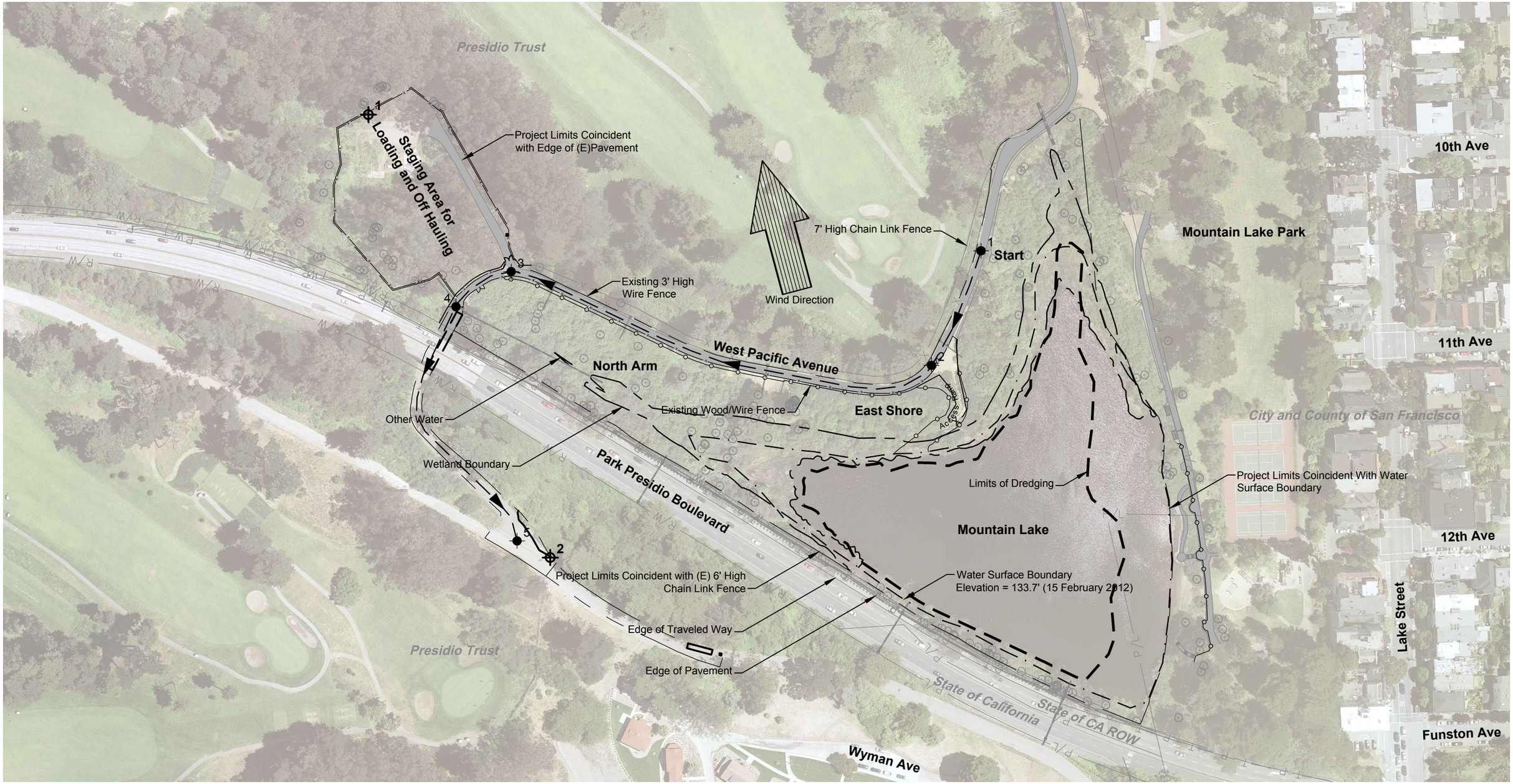
March 2014

Figure 27

N:\2011.isb\1165014.00 Mt Lake Conceptual Design\0-Document\Figures\CCR\CCR_Figure28.dwg 3/19/2014 3:28 PM CAMERON ROSS



Legend

- Project Limits
- Temporary Construction Fencing
- Temporary Construction Fencing (Type ESA)
- State of California Right-Of-Way
- Existing Fence
- Mobile Air Monitoring Location. Position field adjusted as required.
- Existing Asphaltic Concrete Pavement
- Existing Tree
- Predominate Wind Direction (West)
- Perimeter Walk Air Monitoring Location.
- Perimeter Walking Route

0 150 300

1"=150'

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San Francisco, California

Perimeter Air Monitoring Locations

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March 2014

Figure 28

N:\2011.isb\1165014.00 Mt Lake Conceptual Design\0-Document\Figures\CCR\CCR_Figure29.dwg STEPHANIE DOUGLASS 3/18/2014 12:14 PM

Presidio Mountain Lake Treatability Study

VIBRACORE LOCATIONS

VIBRACORES

DREDGING LIMITS

NAD_1983_StatePlane_California_III_FIPS_0403_Feet
WKID: 2227 Authority: EPSG
Projection: Lambert_Conformal_Conic
False_Easting: 6561666.66
False_Northing: 1640416.66
Central_Meridian: -120.5
Standard_Parallel_1: 37.06
Standard_Parallel_2: 38.43
Latitude_Of_Origin: 36.5
Linear Unit: Foot_US (0.3048)

0 25 50 100 150 200 Feet

DIXON MARINE SERVICES, INC.

MLSE201 5992181.5 2115703
MLSE202 5992142.1 2115681.8
MLSE203 5992202 2115664
MLSE204 5992141.1 2115600.6
MLSE205 5992188.5 2115553.1
MLSE206 5992029.1 2115517.8
MLSE207 5992103.8 2115515.5
MLEX226 5992161 2115507
MLEX223 5992162 2115468
MLSE208 5992008.5 2115453.8
MLEX220 5992108 2115420
MLSE210 5992202.7 2115433.8
MLEX219 5992196 2115426
MLSE209 5992125.3 2115405.8
MLSE211 5991973.5 2115394.5
MLSE212 5992068.9 2115389.6
MLEX214 5992232 2115370
MLSE217 5992251.8 2115348.2
MLSE218 5992316.9 2115325.7
MLSE219 5992384.9 2115337.3
MLSE220 5992452.7 2115329.4
MLSE221 5992486.3 2115343.2
MLSE213 5991934.5 2115297.9
MLSE214 5992030 2115291.9
MLSE215 5992116.7 2115301.4
MLSE216 5992195.5 2115315.2

2.5 Feet
6.5 Feet
2.5 Feet
4.5 Feet
5.5 Feet
2.5 Feet

Source: Dixon Marine Services, Inc.

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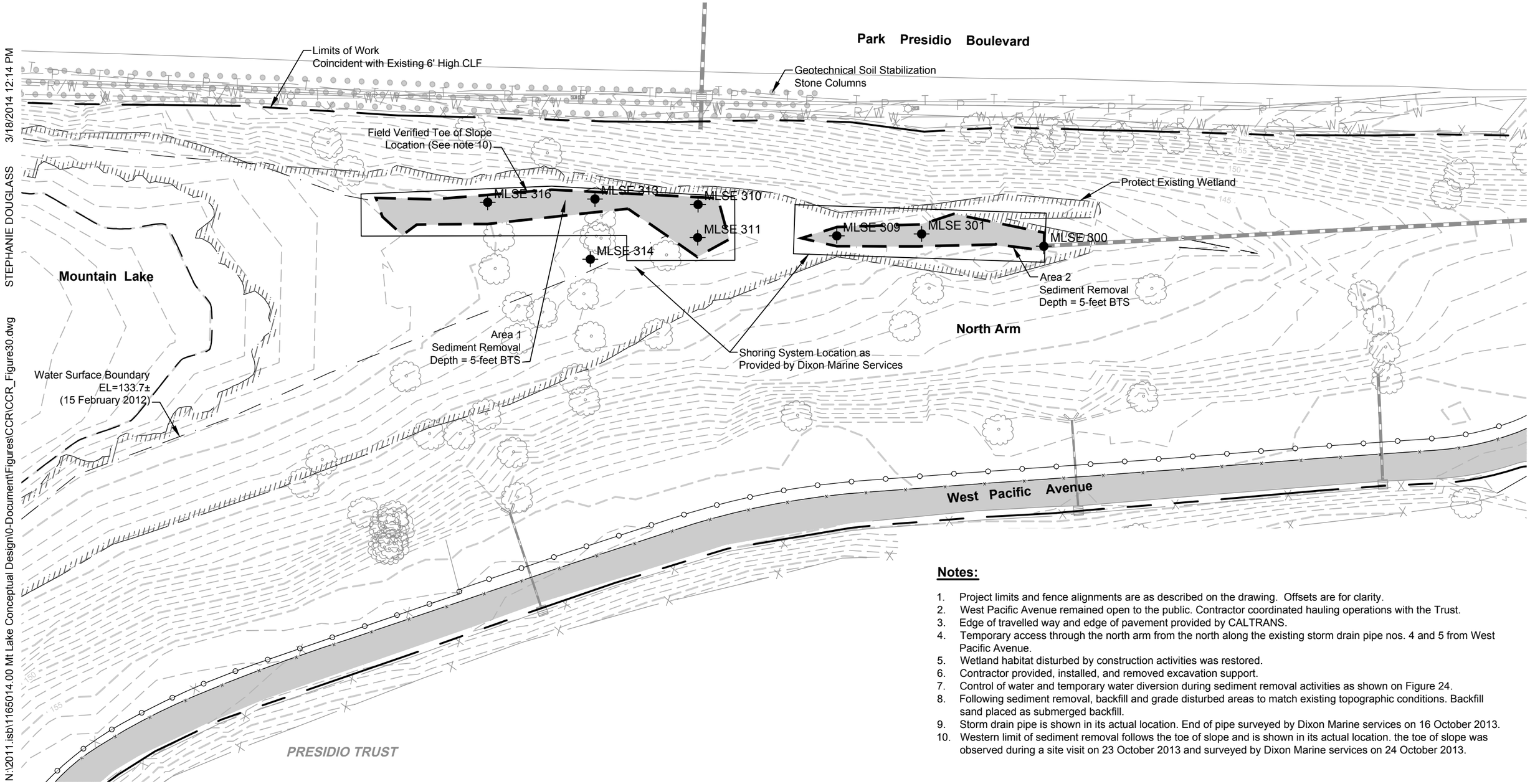
The Presidio Trust
Mountain Lake
San Francisco, California

Sediment Pre-Profiling Locations

K/J 1165014*00
March 2014

Figure 29



3/18/2014 12:14 PM STEPHANIE DOUGLASS N:\2011.isb\1165014.00 Mt Lake Conceptual Design\0-Document\Figures\CCR\CCR_Figure30.dwg

Notes:

1. Project limits and fence alignments are as described on the drawing. Offsets are for clarity.
2. West Pacific Avenue remained open to the public. Contractor coordinated hauling operations with the Trust.
3. Edge of travelled way and edge of pavement provided by CALTRANS.
4. Temporary access through the north arm from the north along the existing storm drain pipe nos. 4 and 5 from West Pacific Avenue.
5. Wetland habitat disturbed by construction activities was restored.
6. Contractor provided, installed, and removed excavation support.
7. Control of water and temporary water diversion during sediment removal activities as shown on Figure 24.
8. Following sediment removal, backfill and grade disturbed areas to match existing topographic conditions. Backfill sand placed as submerged backfill.
9. Storm drain pipe is shown in its actual location. End of pipe surveyed by Dixon Marine services on 16 October 2013.
10. Western limit of sediment removal follows the toe of slope and is shown in its actual location. the toe of slope was observed during a site visit on 23 October 2013 and surveyed by Dixon Marine services on 24 October 2013.

Legend

- Project Limits
- Temporary Construction Fencing (X)
- Temporary Construction Fencing (Type ESA)
- State of California Right-Of-Way (R/W)
- Existing Power (P)
- Existing Fence (X)
- Major Contour - Existing Grade (130)
- Minor Contour - Existing Grade
- Existing Storm Drain Pipe
- Existing Water (W)
- Existing Telephone (T)
- Existing Storm Drain Catch Basin
- Existing Asphaltic Concrete Pavement
- Sediment Removal
- Mapped Wetland Boundary
- MLSE 304 — North Arm Sediment Sampling Location (2013)

0 20 40
APPROXIMATE SCALE IN FEET

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North Arm Pre-Profiling Locations

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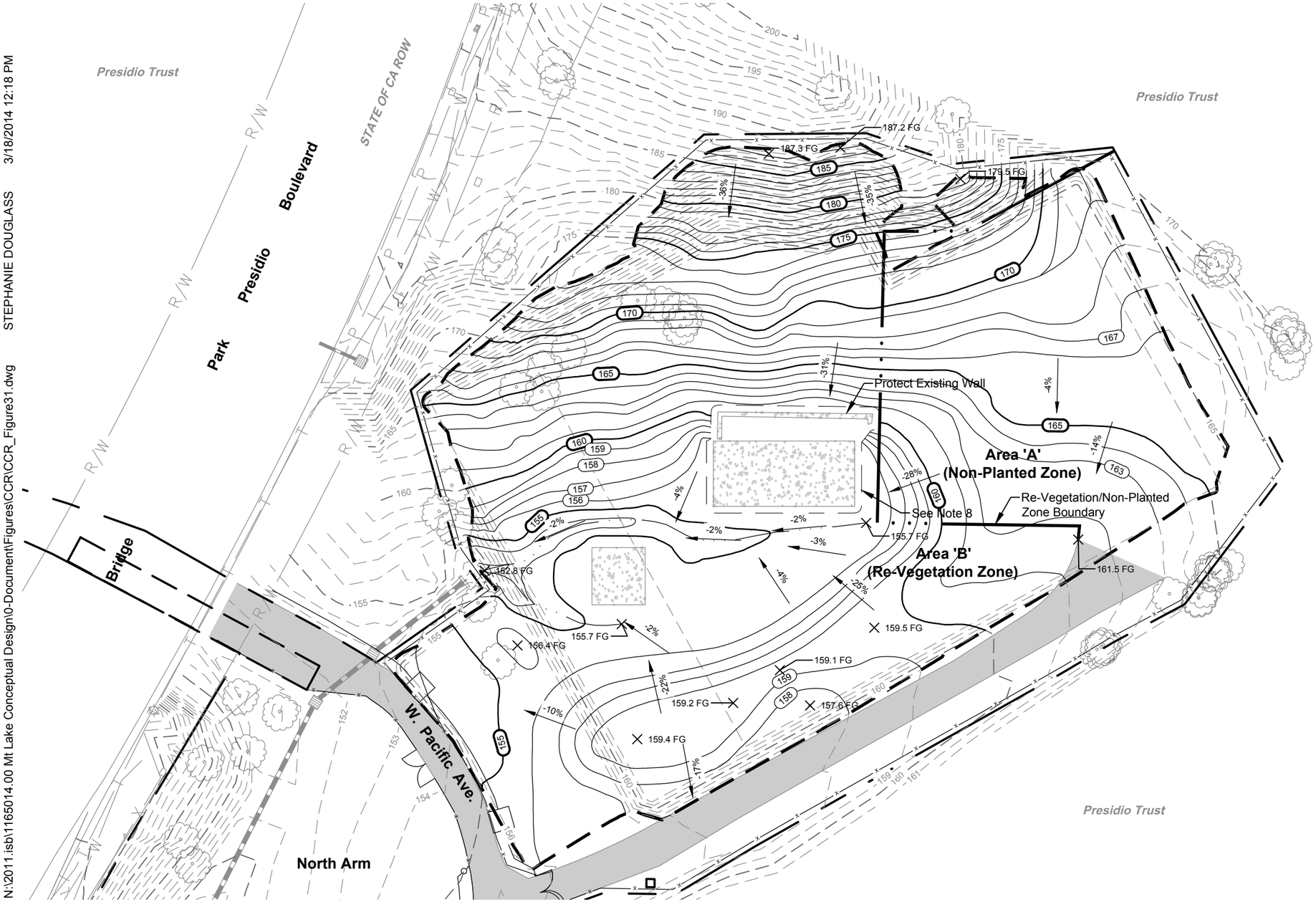
March 2014

Figure 30

N:\2011.isb\1165014.00 Mt Lake Conceptual Design\0-Document\Figures\CCR\CCR_Figure31.dwg STEPHANIE DOUGLASS 3/18/2014 12:18 PM



Notes:

1. Project limits and fence alignments are as described on the drawing. Offsets are for clarity.
2. West Pacific Avenue remained open to the public. Contractor closed West Pacific Avenue during hauling operations and coordinated hauling operations with the Trust.
3. Limits of staging area grading were based on preliminary rough grading plans shown on Phase I design package and do not include all disturbed areas. Contractor restored any disturbed areas in the staging area to original grades unless shown otherwise.
4. Re-vegetation zones (Area B and C) were de-compacted to 85% percent to a depth of 12-inches. Subsoil areas below 12-inches did not exceed 90%.
5. Area B soils were conditioned. Contractor incorporated compost at a rate of 3.7 cubic yards per 1,000 square feet. Spread and till to a depth of 6-inches.
6. Location of concrete pad is approximate. Coordinates and elevation provided by the Trust (dated February 2013).
7. Location of concrete footing is approximate. Configuration is unknown. Coordinates and elevation provided by the Trust (dated February 2013).
8. Finish grade within this boundary was field adjusted. Final grade sloped to drain.
9. Double gate across pavement as shown.

Legend

- Project Limits
- Temporary Construction Fencing
- Temporary Construction Fencing (Type ESA)
- State of California Right-Of-Way
- Existing Power
- Existing Fence
- Major Contour - Existing Grade
- Minor Contour - Existing Grade
- Existing Storm Drain Pipe
- Existing Water
- Existing Telephone
- Existing Storm Drain Catch Basin
- Existing Asphaltic Concrete Pavement
- Existing Concrete Slab
- Major Contour - Finish Grade
- Minor Contour - Finish Grade

N

0 20 40

Approximate Scale In Feet

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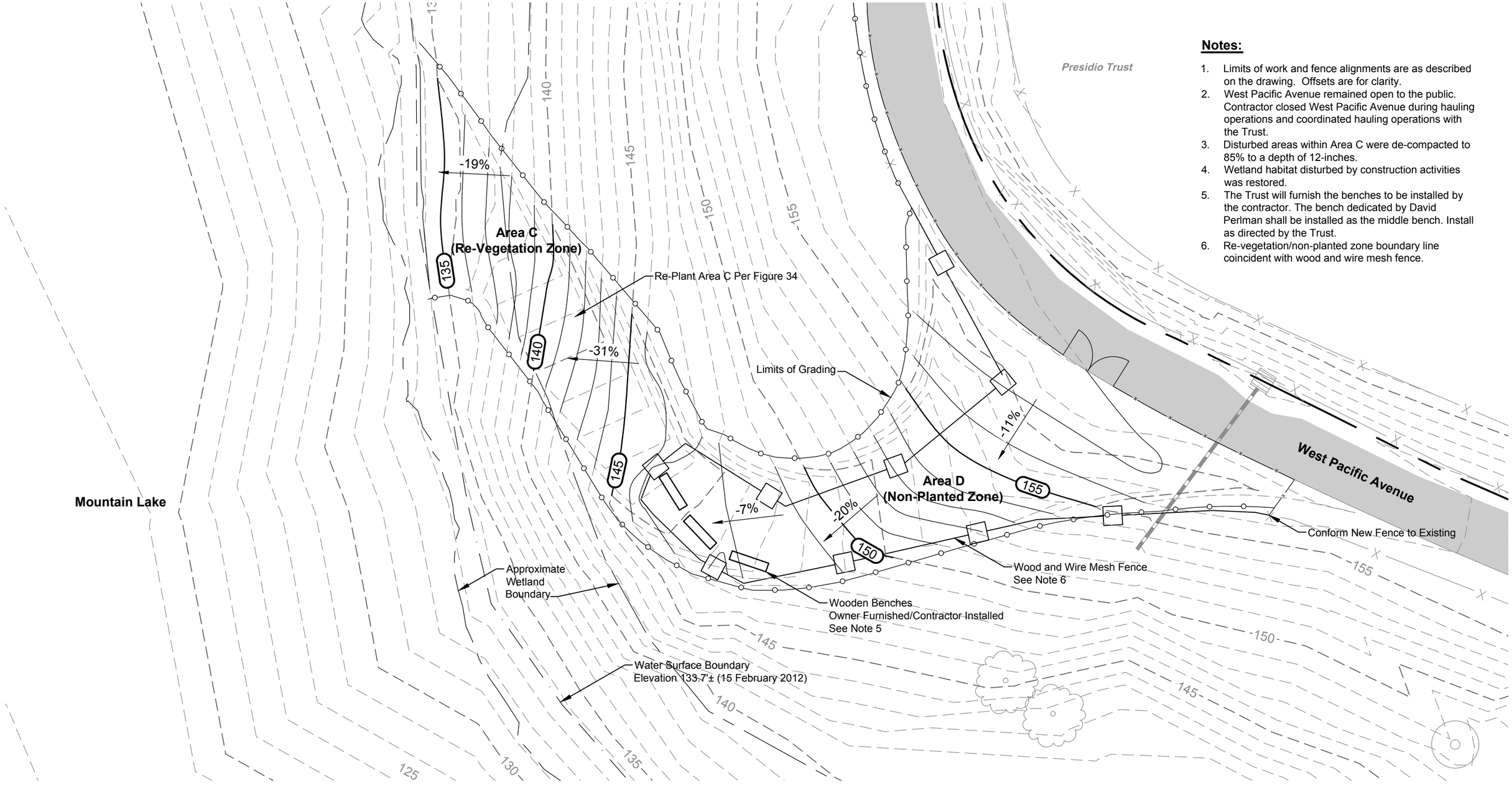
Mountain Lake
San Francisco, California

Staging Area Restoration Grades

K/J 1165014*00
March 2014

Figure 31

N:\2011.isb\1165014.00 Mt Lake Conceptual Design\0-Document\Figures\CCR\CCR_Figure32.dwg 3/18/2014 12:19 PM STEPHANIE DOUGLASS



Notes:

1. Limits of work and fence alignments are as described on the drawing. Offsets are for clarity.
2. West Pacific Avenue remained open to the public. Contractor closed West Pacific Avenue during hauling operations and coordinated hauling operations with the Trust.
3. Disturbed areas within Area C were de-compacted to 85% to a depth of 12-inches.
4. Wetland habitat disturbed by construction activities was restored.
5. The Trust will furnish the benches to be installed by the contractor. The bench dedicated by David Perlman shall be installed as the middle bench. Install as directed by the Trust.
6. Re-vegetation/non-planted zone boundary line coincident with wood and wire mesh fence.

Legend

- Project Limits
- X — Temporary Construction Fencing
- Temporary Construction Fencing (Type ESA)
- R/W — State of California Right-Of-Way
- P — Existing Power
- X — Existing Fence
- 130 — Major Contour - Existing Grade
- Minor Contour - Existing Grade
- Existing Storm Drain Pipe
- W — Existing Water
- T — Existing Telephone
- Existing Storm Drain Catch Basin
- Existing Asphaltic Concrete Pavement

N

0 10 20

Approximate Scale In Feet

Kennedy/Jenks Consultants

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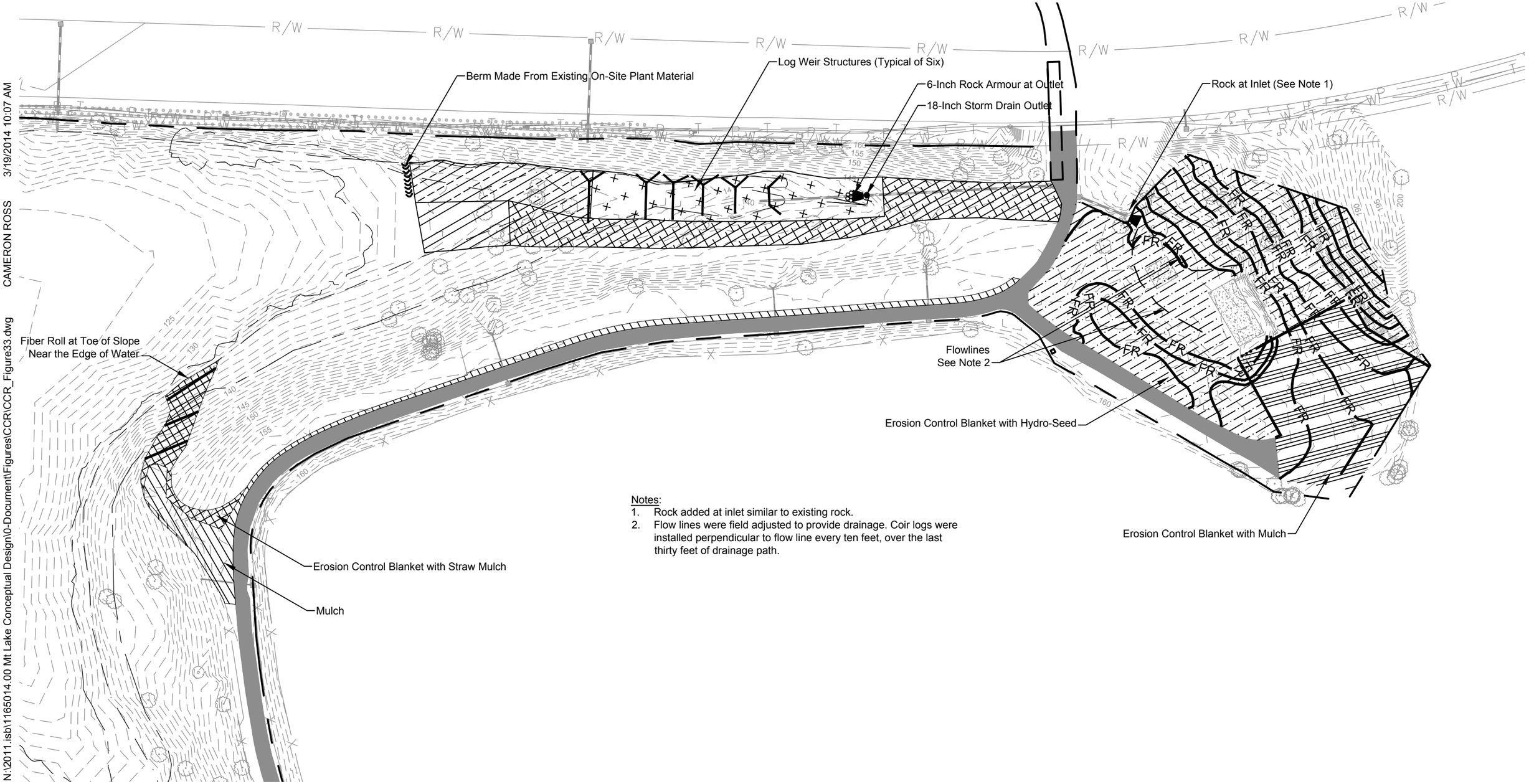
Mountain Lake
San Francisco, California

East Shore Access Area Restoration Grades

K/J 1165014*00
March 2014

Figure 32



Notes:
1. Rock added at inlet similar to existing rock.
2. Flow lines were field adjusted to provide drainage. Coir logs were installed perpendicular to flow line every ten feet, over the last thirty feet of drainage path.

Legend

- Mulch
- Previously Saved Woody Materials Spread Across Area
- Erosion Control Blanket with Alternating Rows of Coir Logs and Straw Bales, spaced every 10-ft
- Erosion Control Blanket with Mulch
- Erosion Control Blanket with Log Weir Structures, typical of six
- Erosion Control Blanket with Hydro-Seed
- Erosion Control Blanket with Straw Mulch
- Erosion Control Blanket and Coir Logs
- FR — FR — Fiber Rolls

0 40 80
Approximate Scale In Feet

Kennedy/Jenks Consultants

The Presidio Trust
Mountain Lake
San Francisco, California

Post-Construction Erosion and Sediment Control Plan

K/J 1165014*00
March 2014

Figure 33

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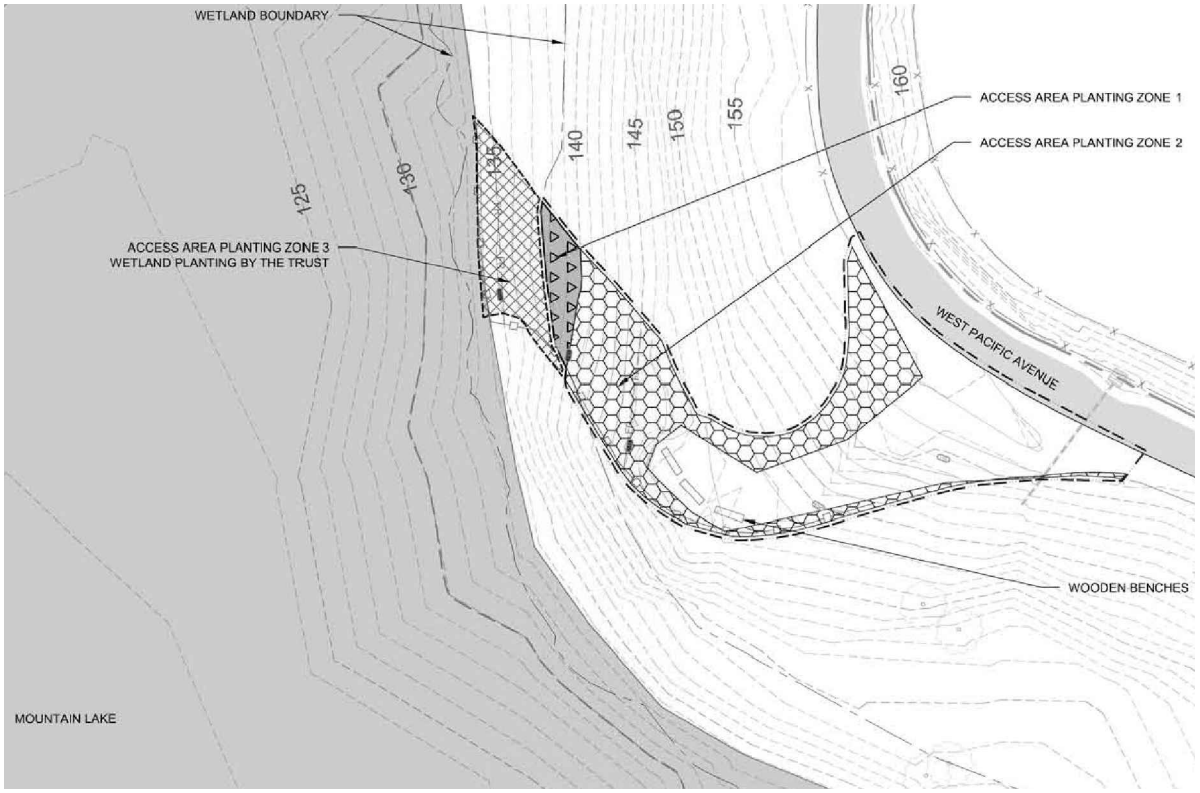

ACCESS AREA PLANTING ZONE 1 PLANTING SCHEDULE

SYMBOL	BOTANICAL NAME	COMMON NAME	PLANTING TYPE	CONTAINER SIZE	OC SPACING (FT)	QUANTITY
	ATHYRIUM FELIX-FEMINA	LADY FERN	NATIVE CONTAINER	SMALL CONTAINER	2	10
	CORNUS SERICEA	AMERICAN DOGWOOD	NATIVE CONTAINER	SMALL CONTAINER	8	1
	FRAGARIA CHILOENSIS	BEACH STRAWBERRY	NATIVE CONTAINER	SMALL CONTAINER	2.5	13
	JUNCUS EFFUSUS	COMMON RUSH	NATIVE CONTAINER	SMALL CONTAINER	2	10
	PTERIDIUM AQUILINUM VAR. PUBESCENS	WESTERN BRACKEN FERN	NATIVE CONTAINER	SMALL CONTAINER	2	10
	SATUREJA DOUGLASII	YERBA BUENA	NATIVE CONTAINER	SMALL CONTAINER	2	10
	STACHYS AJUGOIDES VAR. RIGIDA	HEDGE NETTLE	NATIVE CONTAINER	SMALL CONTAINER	2	10
					TOTAL	64

ACCESS AREA PLANTING ZONE 2 PLANTING SCHEDULE

SYMBOL	BOTANICAL NAME	COMMON NAME	PLANTING TYPE	CONTAINER SIZE	OC SPACING (FT)	QUANTITY
	AESCULUS CALIFORNICA	BUCKEYE	NATIVE CONTAINER	SMALL CONTAINER	10	3
	ANAPHALIS MARGARITACEA	PEARLY EVERLASTING	NATIVE CONTAINER	SMALL CONTAINER	2.5	24
	CORNUS SERICEA	AMERICAN DOGWOOD	NATIVE CONTAINER	SMALL CONTAINER	10	2
	FRAGARIA CHILOENSIS	BEACH STRAWBERRY	NATIVE CONTAINER	SMALL CONTAINER	2.5	71
	JUNCUS EFFUSUS	COMMON RUSH	NATIVE CONTAINER	SMALL CONTAINER	2.5	24
	LONICERA HISPIDULA VAR. VACILLANS	CALIFORNIA HONEYSUCKLE	NATIVE CONTAINER	SMALL CONTAINER	7	3
	OEMLERIA CERASIFORMIS	OSO BERRY	NATIVE CONTAINER	SMALL CONTAINER	6	6
	POLYSTICHUM MUNITUM	WESTERN SWORD FERN	NATIVE CONTAINER	SMALL CONTAINER	4	9
	PTERIDIUM AQUILINUM VAR. PUBESCENS	WESTERN BRACKEN FERN	NATIVE CONTAINER	SMALL CONTAINER	4	9
	QUERCUS AGRIFOLIA	COAST LIVE OAK	NATIVE CONTAINER	SMALL CONTAINER	10	3
	RIBES SANGUINEUM	FLOWERING CURRANT	NATIVE CONTAINER	SMALL CONTAINER	6	5
	ROSA CALIFORNICA	CALIFORNIA WILD ROSE	NATIVE CONTAINER	SMALL CONTAINER	5	7
	SATUREJA DOUGLASII	YERBA BUENA	NATIVE CONTAINER	SMALL CONTAINER	2.5	24
	SYMPHORICARPOS ALBUS VAR. LAEVIGATUS	SNOWBERRY	NATIVE CONTAINER	SMALL CONTAINER	6	5
	SYMPHYOTRICHUM CHILENSE	CALIFORNIA ASTER	NATIVE CONTAINER	SMALL CONTAINER	2.5	24
					TOTAL	219

SOURCE: HT Harvey

Kennedy/Jenks Consultants

Legend

- LIMITS OF WORK
- (E) FENCE
- (E) MAJOR CONTOUR
- (E) MINOR CONTOUR
- (FG) CONTOUR

N

0 10 20 40
Feet

The Presidio Trust
Mountain Lake
San Francisco, California

Re-Vegetation Planting Plan
East Shore Access

K/J 1165014*00
March 2014

Figure 34

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SOURCE: HT Harvey

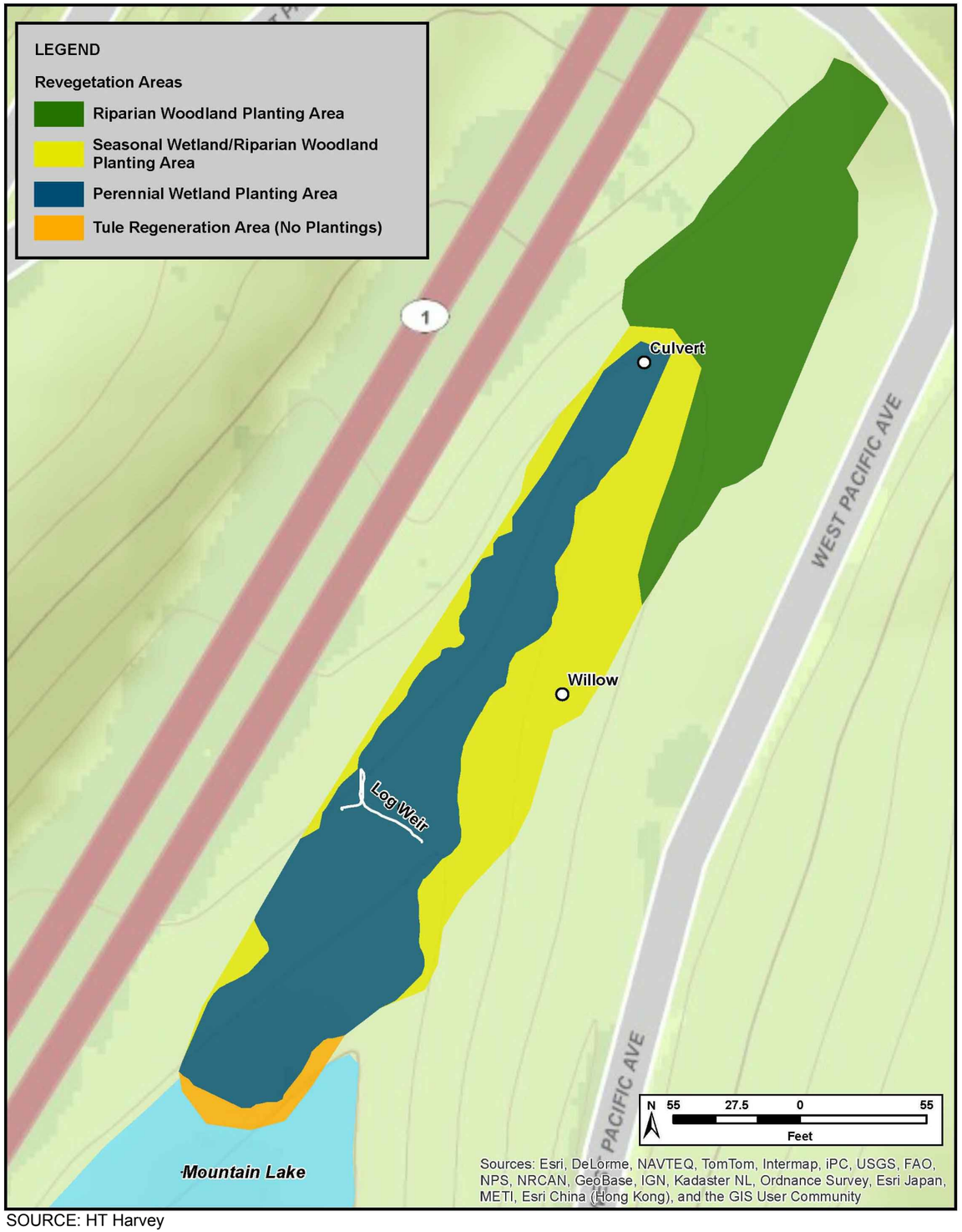
Kennedy/Jenks Consultants

The Presidio Trust
Mountain Lake
San Francisco, California

Re-Vegetation Planting Plan
Staging Area

K/J 1165014*00
March 2014

Figure 35



SOURCE: HT Harvey

Table 1. Perennial Wetland Planting Area – Plant Species Palette

Common Name	Scientific Name	Quantity	Approximate On-center Spacing (ft)	Percent Composition
Understory				
coast carex	*Carex obpunta*	587	3	30%
common rush	*Juncus effusus*	196	3	10%
brown headed rush	*Juncus phaeocephalus*	78	3	4%
seep monkeyflower	*Mimulus guttatus*	117	3	6%
water parsley	*Oenanthe sarmentosa*	137	3	7%
dotted smartweed	*Polygonum punctatum*	176	3	9%
silverweed	*Potentilla anserina*	176	3	9%
panicled bulrush	*Scirpus microcarpus*	372	3	19%
three square	*Scirpus pungens*	264	3	6%
California golden eyed grass	*Sisyrinchium californicum*	2	3	0%
	Total	**2105**		**100%**
	Average		**3.0**	

Table 2. Seasonal Wetland/Riparian Woodland Planting Area – Plant Species Palette

Common Name	Scientific Name	Quantity	Approximate On-center Spacing (ft)	Percent Composition
Understory				
pacific American-aster	*Aster chilensis*	22	5	5%
American cow-parsnip	*Heracleum lanatum*	40	5	9%
common rush	*Juncus effusus*	44	5	10%
dune rush	*Juncus lesueurii*	221	5	50%
spreading rush	*Juncus patens*	21	8	12%
twinberry	*Lonicera involucrata*	7	8	4%
California wild rose	*Rosa californica*	9	8	5%
thimbleberry	*Rubus parviflorus*	9	8	5%
California golden eyed grass	*Sisyrinchium californicum*	2	10	0%
	Understory Total	**375**		**100%**

Common Name	Scientific Name	Quantity	Approximate On-center Spacing (ft)	Percent Composition
Mid-Overstory				
red alder	*Alnus rubra*	19	12	25%
Redosier dogwood	*Cornus sericea*	23	12	30%
California wax myrtle	*Myrica californica*	11	14	20%
arroyo willow (cuttings)	*Salix lasiolepis*	19	12	25%
	Mid-Overstory Total	**72**		**100%**
	Total	**447**		
	Average		**5.0**	

Table 3. Riparian Woodland Plantings – Plant Species Palette

Common Name	Scientific Name	Quantity	Approximate On-center Spacing (ft)	Percent Composition
Understory				
pacific American-aster	*Aster chilensis*	26	7	10%
pink honeysuckle	*Lonicera hispidula*	77	7	30%
twinberry	*Lonicera involucrata*	10	8	5%
coffeeberry	*Rhamnus californica*	39	8	20%
flowering currant	*Ribes sanguineum*	20	8	10%
California wild rose	*Rosa californica*	13	7	5%
thimbleberry	*Rubus parviflorus*	13	7	5%
stinging nettle	*Urtica dioica*	26	7	10%
giant vetch	*Vicia gigantea*	10	8	5%
	Understory Total	**234**		**100%**
Mid-Overstory				
Redosier dogwood	*Cornus sericea*	19	10	15%
toyon	*Heteromeles arbutifolia*	13	10	15%
California wax myrtle	*Myrica californica*	19	10	15%
hollyleaf cherry	*Prunus ilicifolia*	13	10	15%
coast live oak	*Quercus agrifolia*	6	10	5%
arroyo willow (cuttings)	*Salix lasiolepis*	19	10	15%
red elderberry	*Sambucus racemosa*	25	10	20%
	Mid-Overstory Total	**114**		**100%**
	Total	**348**		
	Average		**5.9**	

N

0 50 100

APPROXIMATE SCALE IN FEET

Kennedy/Jenks Consultants

The Presidio Trust
Mountain Lake
San Francisco, California

Re-Vegetation Planting Plan
North Arm

K/J 1165014*00
March 2014

Figure 36

Appendix A

Photographs

Photo #1: 9-14-2011. Pre-construction view, looking north.

Photo #2: 8-2-2012. Pre-construction view, looking northeast.

Photo #3: 8-2-2012. Treatability study – lake core.

Photo #4: Undated. Treatability study - stock vendor photo of bench test demonstration – TenCate Geotube^{R} dewatering tube.

***Photo #5**:* 1-25-2013. Looking east at east shore access prior to construction.

***Photo #6**:* 1-31-2013. Looking northwest at east shore access construction.

Photo #7: 2-27-2013. View of east shore access.

Photo #8: 10-10-2012. MHA, after clearing and before grading.

Photo #9: 2-14-2013. MHA during construction.

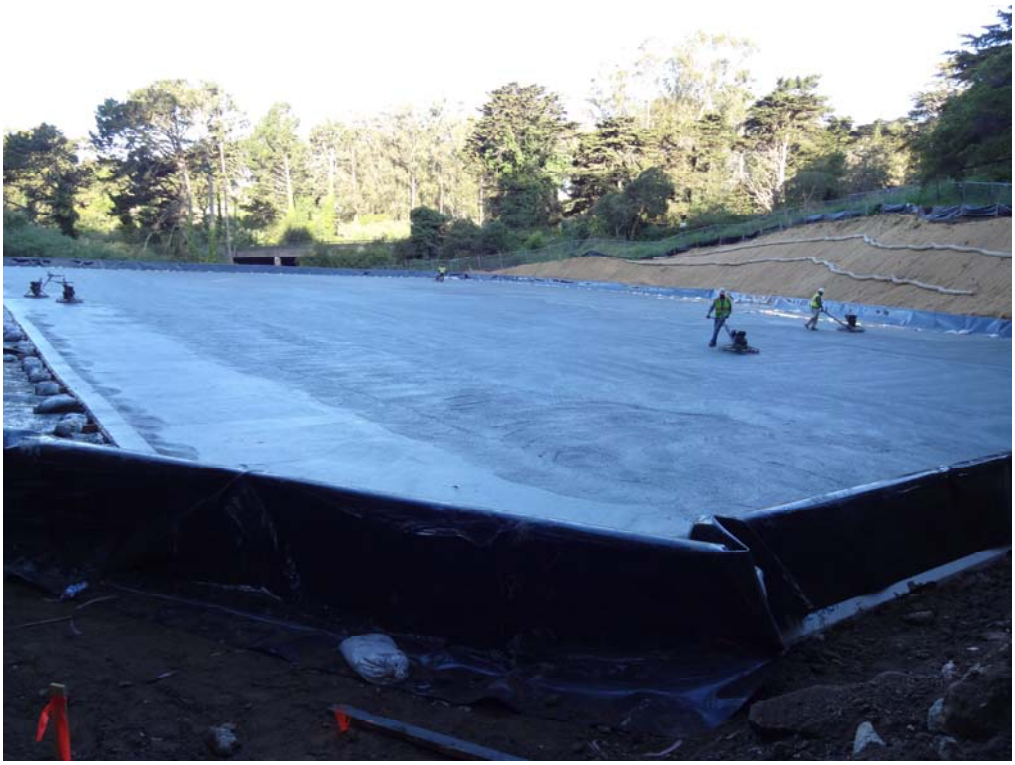


Photo #10: 4-23-2013. MHA after concrete placement.

***Photo #11**:* 2-1-2013. Clearing tules adjacent to east shore access.

***Photo #12**:* 3-1-2013. Welding HDPE suction dredge line.

Photo #13: 4-9-2013. View of dredge.

Photo #14: 5-14-2013. Laying out geotextile dewatering tubes.

***Photo #15**:* 6-10-2013. Geotextile dewatering tubes in use.

***Photo #16**:* 6-27-2013. Three layers of geotextile dewatering tubes.

***Photo #17**:* 2-28-2013. Looking north at North Arm prior to construction.

***Photo #18**:* 10-3-2013. Looking south; clearing at North Arm.

Photo #19: 11-15-2013. Excavating at North Arm. Note sheet piling.

Photo #20: 12-17-2013. North Arm after backfilling.

***Photo #21**:* 2-18-2013. Example of water quality protection structure, near MHA.

***Photo #22**:* 2-19-2013. Example of water quality protection structure at MHA

Photo #23: 1-30-2013. Uncovered cultural resource – concrete footing in MHA.

Photo #24: 1-9-2013. Uncovered cultural resource – wall in MHA.

Photo #25: 7-15-2013. Removing sediment-filled dewatered tubes.

Photo #26: 8-1-2013. MHA after geotextile dewatering tube removed

Photo #27: 4-25-2013. Caltrans contractor repairing drain near MHA.

Photo #28: 5-3-2013. Caltrans contractor working along Park Presidio Blvd.

Photo #29: 5-6-2013. Caltrans contractor working along Park Presidio Blvd

Photo #30: 6-17-2013. Caltrans contractor working on cross drain.